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ABSTRACT

This report discusses the role of graduate nurses in public health leadership and the development of new models of graduate education to prepare nurses for public health leadership. It reviews the need for graduate nurses in public health leadership positions, the health needs of the population, the role of public health in a changing health care system, and the need for nurses to have skills in public health. The report then examines the current status of graduate education to prepare nurses for public health leadership roles. Three degree models for graduate education developed at the University of Minnesota are then reviewed: (1) a master of science in nursing with an emphasis in public health nursing and a focus in essential public health sciences; (2) a dual master's degree in public health nursing and public health administration, maternal and child health, epidemiology, environmental/occupational health, community health education, or public health nutrition; and (3) a master's degree with emphasis in public health nursing and a focus in public health and related fields. Two appendixes provide course descriptions and a literature review. (Contains 55 references.) (MDM)

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Educating Nurses for Public Health Leadership

Project Report
of the Interdisciplinary Graduate Program Models
to Prepare Public Health Nurses for Leadership
in a Changing Health Care System

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1996

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Part I

Why We Need Graduate Nurses for Public Health Leadership Positions

Nursing education must both respond to and influence society and the health care system. To meet these responsibilities, nursing education must change as society and the health care system evolve. In addition, nursing education should produce graduates who can influence society and the health care system through their leadership.

In 1993, the United States Department of Health and Human Services (DHHS), Health Resources and Services Administration (HRSA), Division of Nursing (DN), recognized the need for innovative educational programs addressing preparation for public health leadership. This monograph reports on a contract the Division of Nursing established with the School of Nursing at the University of Minnesota to develop new models of graduate education preparing nurses for leadership positions in official public health agencies. This document serves as a reference for others developing a similar effort.

Health Needs of the People of the United States

Healthy People 2000 (DHHS, 1990) challenges us to develop creative strategies that prevent premature death and disability, to preserve an environment that supports human life, and to cultivate family and community support for health promotion, disease prevention, and protection. While all health care providers play a role in addressing these objectives, advanced-practice public health nurses with graduate preparation can make unique contributions, especially by planning and implementing intervention strategies designed to manage the major lifestyle and environmental factors that contribute to premature morbidity and mortality.

Lifestyle Factors

Of the 1,757,216 deaths recorded in 1990, McGinnis and Foege (1993) demonstrate that at least 50% were premature, due to the influence of lifestyle factors:

Number	*Due to Causes Associated with—*
400,000	Tobacco Use
300,000	Diet/Inactivity
100,000	Alcohol
30,000	Drug Use
90,000	Infections
60,000	Toxic Agents
35,000	Firearms
30,000	Sexual Behavior
25,000	Motor Vehicles

Despite such figures, many Americans continue unhealthy behaviors. In 1994, according to *The Nation's Health* (American Public Health Association [APHA], 1995):

Percent	*Behavior*
63	Had No Regular Strenuous Exercise
45	Did Not Limit Fat in Their Diets
27	Did Not Wear Seat Belts
26	Smoked

Between 1984 and 1994, fewer Americans maintained proper weight, obeyed the speed limit, ate a diet high in fiber and low in sodium and sugar with adequate vitamins and minerals, or got enough sleep. Health promotion strategies related to lifestyle *can* have a powerful influence on an individual's health behavior. Between 1984 and 1994, for example, the percentage of Americans who did not smoke increased—as did the percentage who avoided driving after drinking, wore a seat belt, or had smoke detectors in their homes (APHA, 1995).

The Social Environment

Contemporary public health practitioners recognize the inadequacy of focusing only on individual behavior. Interventions must also address the social environment, a powerful influence on public health. Numerous studies have shown that peer pressure influences the use of illicit drugs, smoking, alcohol use, and early sexual activity, all of which contribute to both physical and mental health problems. Television and the movies—as well as an individual's or family's mental status—may influence risk-taking behavior and violence. Economic pressures may influence behavior related to health and the occurrence of mental illness or family stress.

The Institute of Medicine (IOM, 1988) has called upon the public health system to move beyond strategies directed at immediate health problems to examine underlying social and economic factors in the United States. While changing health behavior and advocating changes in the social and economic structure are complex endeavors, public health nurses can make significant contributions to improved conditions for achieving health goals.

The Physical Environment

Assessing the health of the public requires addressing the physical environment in which people live and work. Safe drinking water, air quality, and soil contamination are just a few of the issues to be examined in any assessment of environmental health hazards. While some progress has been made towards reaching several of the *Healthy People 2000* (DHHS, 1990) environmental objectives, much work and research remain in the areas of sanitation, vector control, and pollution prevention. Ozone and carbon monoxide still pollute the air, for instance, and blood lead levels in inner-city low-income black children continue to exceed 200% of the targeted objective for the year 2000 (DHHS, 1995b).

In its 1988 assessment of the current status of public health, the IOM (1988) found that environmental health services were often provided in isolation by state and local public health agencies. This separation has resulted in disjointed policy development, fragmented service delivery, lack of accountability, and a general weakening of the public health effort. The committee recommended that state and local health agencies "strengthen their capacities for identification, understanding, and control of environmental problems as health hazards" (p. 12). Further, the more recent IOM publication *Nursing, Health & the Environment* (1995) called for an enhancement of the environmental health curriculum in all levels of nursing education.

Early Detection and Screening

Another important public health strategy is early detection and screening. Survival rates for breast and cervical cancer, to cite just one example, increase with screening, early detection, and treatment. In 1987, only 25% of women 50 years and older had received a mammogram and breast exam in the preceding two years, but with more emphasis on screening and early detection this number *doubled* from 1987 to 1993. Further, among women 18 years and older, 75% had received a Pap test in the preceding three years.

A significant gap in mammography screening, however, is revealed by education levels throughout this period. In 1993, levels of recent mammography were 35% lower among women with less than 12 years' education and 17% lower among women with a high-school education (DHHS, 1995a). Between 1986 and 1990, the number of new cases of cervical cancer in women under 50 years old increased (Horton, 1995). Public health nurses can lead the effort to remove the educational, social, emotional, and economic barriers that block people from receiving appropriate screening, early detection, and treatment services.

Substance Abuse

Public health nurses can positively address the problem of substance abuse and teenage pregnancy. Alcohol is a major factor in suicides, homicides, and motor vehicle accidents. The use of alcohol and other drugs by teenagers and young adolescents is a major contributor to motor vehicle accidents and violence. Despite significant decreases in the percentage of high school students who drink heavily, the percentage of college students engaging in heavy drinking in a given two-week period remains high at 40%. The proportion of motor vehicle deaths related to alcohol decreased significantly in the last decade (DHHS, 1995b), but the decline has slowed in recent years, indicating the need for continued community programs.

Teenage Pregnancy

Early sexual behavior in adolescents may result in unwanted pregnancy or infection with sexually transmitted diseases. Early pregnancy (that is, among girls under age 18)—especially when combined with smoking, alcohol or other drugs, and lack of prenatal care—are also among the preventable risk factors associated with low-birth-weight infants (7% of all infants born in the United States). Community interventions targeted specifically at adolescents 14 to 17 years old are crucial, since the number of adolescents participating in sexual intercourse has dramatically increased since 1987 (DHHS, 1995b).

Other Issues

Community-wide health protection strategies that focus on issues such as gun control, food and drug safety, and unintentional injuries also promote public health (DHHS, 1990).

The Need for Public Health Leadership

The Future of Public Health (IOM, 1988) concludes that one critical step in improving the nation's health care system must be improvements in the quality of education for health care professionals. We must provide access to quality graduate preparation in public health, the report emphasizes, if we are to build within our nation's health care system the capacity to meet the complex and growing health needs of the public. With more need than ever for public health professionals and with nurses accounting for one of the largest groups of public health professionals, there is ample justification to examine the educational paths that nurses follow to positions within and as heads of a state health department.

One way to a career in public health is a graduate degree from a school of public health. Yet those nurses who pursue such a course without an accredited nursing component may lack the credentials necessary for advanced practice in nursing or nursing education. Conversely, nurses who complete a master's degree program in nursing without advanced preparation in public health may lack the knowledge and skills they need to become leaders in official and other public health agencies. Preparing nurses both in public health *and* advanced nursing requires a program that combines the essential elements of both.

The IOM Report on Nursing, Health, and the Environment (1995)

The IOM (1995) also recognizes the need for nurses to contribute to reducing environmental health related problems. The IOM study clearly documents the relationship between environmental issues and public health. Community and environmental health protection issues emphasize the important role that public health nurses play in the front lines of health management and public education. Public health nurses are often the first and most consistent contact for many individuals and communities in need of environmental health assessment, advice, and advocacy. At the graduate level, public health nurses can develop interventions promoting environmental health that involve interdisciplinary collaboration and approaches based on a community-focused rather than an individual-focused nursing model.

Pew Vision of the Future Health Care System

The rapidly changing health care system influences the need for public health leadership. The Pew Health Professions Commission published a vision of the future in its first report in 1991, *Healthy America: Practitioners for 2005*. The next decade and beyond, according to the Pew Commission, will see more emphasis on health—prevention of disease and injury, promotion of health and healthy behaviors, elimination of environmental hazards, and more individual responsibility for health-related behaviors. At the same time, the nation's health care system will become more population-based—that is, people will pay more attention to risk factors in both the physical and social environments and address these factors more at the population level than the individual level.

With more complete patient histories easily available in electronic form, coupled with more access to good information about diagnoses, prognoses, and treatments, the health care system in the United States will be driven increasingly by electronic information. This, in turn, will create a stronger focus on consumers, as patients become more fully informed and participate in decisions affecting their own health and providers become more accountable for a wider range of care outcomes. Americans will make more outcome-based decisions reflecting a wider knowledge of treatment effectiveness in similar circumstances, and they will rely more on integrated, coordinated teams of health care providers. Health care questions will include how to balance technological improvements and the effects on human values, the interpersonal aspects of care delivery, and financial costs. People will realize that health care is interdependent both with other domestic issues, such as education, productivity, and welfare *and* with the health systems of other countries.

In the future, the health care system will require professionals with a wider range of knowledge, skills, attitudes, values—and education. According to the Pew commission, we will require health professionals who can communicate and collaborate effectively with others on teams and who can adjust to change, for that is what the future in health care is about. The Pew commission predicts that health care professionals in the future will need several competencies in order to care for the community's health, provide contemporary clinical care, participate in the emerging system of expanded accountability, ensure cost-effective care, practice prevention and promote

healthy lifestyles, involve individuals in the decisions affecting their own care, and manage health information. The Pew Commission (1991) also identified emerging trends with specific relevance and importance to nursing:

- An *increasingly aging population* places greater demands on the nation's capacity to deliver health care, steadily shifting the focus from acute to chronic disorders. This requires changes in the skill base of individual nurses and in the scope of nursing as a profession from an acute care orientation to more home or community based approaches.
- The need for more and better integration of *health promotion and disease prevention* strategies, in which nurses in particular will work directly in educating patients and communities in ways to delay or prevent the onset of chronic disorders.
- As the attention on *cost-effective care* magnifies, community-based preventive care provided by nurses will become even more commonplace. Working in home and community settings with at-risk pregnant teenagers, for instance, will improve both maternal and child health, reducing the probability of more expensive care after birth. In hospital settings, they will take on more responsibilities in critical care units. They will assume more independent clinical roles as nurse midwives and practitioners in primary care settings in medically underserved areas.
- As the demand for *management of health care* becomes even more intense, nurses will be seen increasingly as important managers at the point of patient care, in large systems of institutionalized care and within community health agencies, long-term care facilities, and schools. In many of these settings, nurses will work more independently than in the past, providing an essential role in the integration of care delivery, whether the goal is improved clinical outcomes, less expensive care, or improved patient satisfaction.
- The pressures for more cost-effective, consumer-responsive health care will lead to greater demand for *community-oriented care*, requiring health professionals able to work effectively in teams with a broad array of service providers. Nurses will play an essential role in this trend as well.
- The broadening opportunities and demands for health care delivery reflected by these trends requires nursing to *differentiate the practice and education patterns* of the profession to meet the needs of individuals in more diverse settings than ever before.

Nursing Education

To meet the new and more diverse health needs of the future, the Pew Commission proposed six specific strategies for nursing education:

1. Develop programs at all levels of nursing education reflecting the needed contributions of nurses in the changing care system. Change licensing and care delivery regulations so that nurses receive both the appropriate training and the rewards for their contributions. Model new differentiated nursing arrangements in the health care delivery system, and evaluate their impact on outcomes.
2. Restructure nursing school faculty positions and programs to involve educators more directly with patient care and the practice of nursing.
3. Develop interdisciplinary teaching, practice, and research programs for the maintenance care of chronic patient populations.

4. Redirect a significant part of all nursing programs and schools to community health care needs.

5. Continue development of graduate-level clinical training programs for nurses in areas where health care services can reduce cost and improve care access and quality.

6. Conduct comprehensive, continuing strategic planning programs within each nursing school and program.

Public Health

Public health, the Pew Commission noted (1993), "is unique among the health professions in that its base of knowledge comes from a broad array of disciplines" (p. 101). No "generally recognized scope of practice or set of skills" defines the profession; no state licenses public health professionals; no national examinations determine practice qualifications; no standards of care exist to assess performance; and most public health workers lack any formal public health training. Those entering the profession come from disciplines such as medicine, dentistry, nursing, midwifery, law, business, sociology, and anthropology. Even so, the Pew report concluded that "a key set of core disciplines is generally recognized as representing the breadth of public health content," and the profession "enjoys enhanced opportunities to improve the public's health through the amalgamation of [its] diversity" (p. 101).

The Pew Commission identified three emerging trends with specific relevance and importance to the public health profession:

1. Public health leaders, as well as rising expectations among the public at large and increasing concern over deterioration of the public health infrastructure, focus increasingly on *health promotion and disease prevention* as an effective approach to reducing the rate of health care costs. Achieving the targets identified by *Healthy People 2000* (DHHS, 1990) will require a significant restructuring of the health care delivery system, including improved access to preventive services.

2. The increasing need for better, more accessible public health services focuses attention more sharply on the need for the public health profession to clearly *define its mission and scope of practice.*

3. The changing broad-brush picture of America's health care delivery system uncovers the need for *linkages between public health education and public health practice,* in which educators undertake professional responsibilities in public health agencies and provide continuing education to practicing public health personnel.

Public Health Education

To meet these challenges, the Pew Commission made five specific proposals:

1. Undertake a strategic planning process to clarify the role of public health education.

2. Establish collaborative models among schools of public health and local public health agencies.

3. Encourage collaboration among schools and programs to develop and evaluate innovative educational approaches.

4. Create demonstration programs in coalition-building with public health schools and programs.

5. Assist the other clinically-oriented health professions in a better understanding of the health needs of the public and community.

Role of Public Health in a Changing Health Care System

The changing health care system in the United States presents both opportunities and challenges for public health professionals, especially as managed care and other organizational responses addressing the nation's total health expenditures (now approaching $1.6 *trillion*) and restructuring of the delivery of health care draw nurses out of hospitals and other traditional institutional settings.

The Future of Public Health (IOM, 1988) drew a dramatic picture of the principal challenge facing official public health agencies—to be stewards of basic health needs while, at the same time, averting health care crises and providing care to individuals without alternative resources. The study advocated renewed emphasis on the core public health functions of assessment, policy development, and assurance. To achieve these goals will require modifying the statutory framework that governs public health, changing the organizational structure of public health agencies, building greater agency capacity, and improving public health education. The aim must be to replace the clamor for attention to public health crises with broad public support for public health and disease prevention.

Following on the foundation laid down in its 1993 report, *Health Professions Education for the Future: Schools in Service to the Nation*, the Pew Health Professions Commission in 1995 published *Critical Challenges: Revitalizing the Health Professions*, which envisioned a reformed health care system that is more—

- *Managed*, with better integration of services and financing
- *Accountable* to those who purchase and use health services
- *Aware* of, and *responsive* to, the needs of the enrolled populations
- *Effective* with fewer resources
- *Innovative and diverse* in how it provides for health care
- *Inclusive* in its definition of health
- *Focused* on education, prevention, and care management
- *Oriented* to improving the health of the *entire* population
- *Reliant* on outcomes data and evidence

The Pew report envisioned a great demand for public health professionals but counseled that the nursing profession must clarify the practice responsibilities for the various levels of nursing. It recommended that associate-degree nurses practice primarily in hospitals and nursing homes, bachelor's-degree nurses focus on hospital-based care management and community-based practice, and graduate-degree nurses provide specialty practice.

Leaders within the nursing profession have joined the call for a new public health nursing focus, especially to respond to the challenges of managed care (Aiken, 1995) in the context of "population-based managed care" (Shamansky, 1995).

Why Nurses Need Skills in Public Health

The beginnings of public health nursing date from Florence Nightingale's pioneering work in epidemiology and administration during the Crimean War more than 140 years ago. Based on her detailed records and descriptions of the distributions and patterns of disease among a specific population, the British implemented environmental strategies to reduce the substantial mortality rate among British troops in the

Crimea—and the rate plunged from 40% to only 2%. After 1860, nurses in England, then in the United States, began to replace religious and philanthropic organizations in providing public health care, especially among the poor.

Rapidly changing demographic patterns created by an increasingly industrial and urban society introduced new concerns about public health at the close of the 19th century, especially among poor people living in crowded cities. Founding American public health nursing in 1893, Lillian Wald declared the important value of the nurse to the community, both in treating disease and ill health *and* in identifying and intervening to improve economic and social factors in the lives of people (Buhler-Wilkerson, 1993).

Current Focus of Public Health Nursing

Nightingale's contributions in the collection of data about health conditions and analysis of trends, as well as Wald's contributions in building community relationships and community organizing four decades later, laid the foundations of modern public health nursing in this century, with its emphasis on health promotion, protection, and disease prevention in populations.

Once attending the health needs of soldiers in the field and the poor in crowded tenement neighborhoods, public health nurses now serve the entire population, focusing on those at greatest risk, such as women and children, the homeless, refugees, migrants, people of specific ethnic or racial groups experiencing discrimination or injustice, substance abusers, and victims of violence and communicable disease, as well as elderly people with both acute illnesses and injuries and chronic illness and disabilities.

While the terms *public health nursing, community health nursing, visiting nursing,* and *home health nursing* are all in current use, the first two in particular have come to describe health practice with a community orientation focused on populations. ANA's *Standards of Community Health Nursing Practice* (1986) considers the two terms synonymous. The Public Health Nursing Section of the American Public Health Association (1996) defined *public health nursing* as "the practice of promoting and protecting the health of populations using knowledge from nursing, social, and public health sciences."

What is the population concept used in the definition of *public health nursing* and the community concept in *community health nursing*? Attempts to distinguish between the two concepts include:

- *Population* is a large, unorganized collection of people grouped by one or more demographic features. *Community* is a collection of people who engage in repeated fact-to-face communication, identify with one another, are interdependent, and share common purposes (Spradley, 1990).

- *Population* is a collective of individuals with common properties such as sex, gender, age, or health- or illness-related characteristics. Populations may be circumscribed by geographic boundary (e.g., county) or time ("baby boomers"). *Community* exists when individuals share a locale and common identity, engage in interdependent and patterned social interaction, and work toward shared goals and collective action (Kang, 1995).

Community indicates people engaged in shared activities, communication, identity, and purpose, whereas the people of a population *may* possess one or more common characteristics but lack linked or shared functions such as identity, communication, activity, or intention around a common purpose or goal. Implicit in these definitions is the notion that a population may contain many communities and that communities may contain different populations.

Nursing professionals should bear in mind the similarities as well as the differences between populations and communities as they consider the mission of public health, defined in the 1988 IOM study *The Future of Public Health* as fulfilling "society's interest in assuring the conditions in which people can be healthy through organized community efforts by both private individuals and organizations and public agencies" (p. 7). Citing a need to refocus health care from the individual and the cure of disease to the community and prevention, Aroskar (1995) suggests that a central goal of public health is promoting "the common good, the good of the community, or the whole population" (p. 17), including the concept of social justice. Josten et al (1995) advocate a definition of public health nursing that includes the principle of basing public health on the health needs of the people.

Part II

Current Status of Graduate Education to Prepare Nurses for Public Health Leadership

One strategy for strengthening the public health infrastructure, outlined in *The Future of Public Health* (IOM, 1988), is to prepare public health nurses at the graduate level to assume leadership roles in public health agencies. Through a contract from the Division of Nursing, the School of Nursing at the University of Minnesota has developed new models of interdisciplinary education to prepare nurses at the master's-degree level for public health leadership. These models were developed in order to meet professional standards and guidelines. Those professional standards and guidelines include those developed by the Association of Community Health Nurse Educators, Council on Education for Public Health, American Nurses' Association, and the American Association of Colleges of Nursing.

Association of Community Health Nurse Educators (ACHNE)

The Association of Community Health Nurse Educators (ACHNE) developed guidelines (1992) for graduate community and public health nursing (C/PHN) curriculum content in five essential areas:

1. Theoretical Perspectives

- Nursing Frameworks and Theories
- Public Health Frameworks and Theories
- Health Promotion and Disease Prevention Theories
- Organization, Leadership, and Management Theories
- Teaching and Learning Theories
- Social and Political Change Theories
- Theories of Justice and Ethics
- Community Development Theories

2. Public Health

- Community Health Planning
- Program Planning and Development
- Interdisciplinary Collaboration
- Public Health Ethics
- Public Health Research
- Health Care Systems
- Public Health Policy
- Environmental Health

3. Community/Public Health Nursing (C/PHN)

- Nursing Process
- C/PHN History
- C/PHN Research
- Primary Health Care Nursing
- Community and Group Education
- Ethical and Legal Issues in C/PHN
- Case Management

4. Methodology

- Biostatistics
- Demography
- Epidemiology
- Program Evaluation
- Research Methods
- Grant Writing
- Computer Skills

5. Leadership

- Professional Accountability
- Interdisciplinary Collaboration and Coordination
- Politics of Health Care and Health Services
- Public Health Administration
- Economics, Financial Management, and Budgeting
- Quality Assurance
- Personnel Recruitment and Management
- Consultation
- Marketing of Health Care
- Community Action and Empowerment

Council on Education for Public Health

Since the definitions of public health and community health nursing indicate that they utilize knowledge from public health, examination of recommended public health courses must also be considered. The Council on Education for Public Health (1993) recommends that graduate programs in public health include course work in five areas:

1. Epidemiology
2. Health Services Administration
3. Biostatistics
4. Social and Behavioral Sciences
5. Environmental Health Sciences

American Nurses' Association (ANA) Certification Requirements

In its published standards for community health nursing practice (1986), the American Nurses' Association (ANA) noted that while specific activities may change, the goals of public health nursing remain the same, "to reduce the amount of disease, premature death, discomfort, and disability" (p. 2). With that in mind, the ANA recommends courses in these areas for students enrolled in graduate (specialist) degree programs in community health:

- Public health sciences
- Community assessment process
- Program administration
- Trends and issues
- Theory
- Research
- Health care delivery system

Preparation in these areas supports ANA's nine professional standards for both bachelor's-level (generalist) and graduate-degree (specialist) nurses:

1. *Theory:* "The nurse applies theoretical concepts as a basis for decisions in practice" (p. 5).
2. *Data Collection:* "The nurse systematically collects data that are comprehensive and accurate" (p. 6).
3. *Diagnosis:* "The nurse analyzes data collected about the community, family, and individual to determine diagnosis" (p. 7).
4. *Planning:* "At each level of planning, the nurse develops plans that specify nursing actions unique to client needs" (p. 8).
5. *Intervention:* "The nurse, guided by the plan, intervenes to promote, maintain, or restore health, to prevent illness, and to effect rehabilitation" (p. 10)..
6. *Evaluation:* "The nurse evaluates responses of the community, family, and individual to interventions in order to determine progress toward goal achievement and to revise the data base, diagnoses, and plan" (p. 11).
7. *Quality Assurance and Professional Development:* "The nurse participates in peer review and other means of evaluation to assure quality of nursing practice. The nurse assumes responsibility for professional development and contributes to the professional growth of others" (p. 13).
8. *Interdisciplinary Collaboration:* "The nurse collaborates with other health care providers, professionals, and community representatives in assessing, planning, implementing, and evaluating programs for community health" (p. 14).
9. *Research:* "The nurse contributes to theory and practice in community health nursing through research" (p. 15).

American Association of Colleges of Nursing (AACN)

While recognizing that "each discipline has its own focus," the American Association of Colleges of Nursing (AACN) nonetheless advocates a strong interdisciplinary approach to education of health professionals. In a March 1995 position statement, AACN defined *interdisciplinary education* as an approach—

> in which two or more disciplines collaborate in the learning process with the goal of fostering interprofessional interactions that enhance the practice of each discipline. Such interdisciplinary education is based on mutual understanding and respect for the actual and potential contributions of the disciplines. (p. 1)

To achieve this goal, AACN recommends that schools of nursing:

- Develop programs and curricula with opportunities for undergraduate and graduate nursing students to interact collaboratively with a range of health care disciplines
- Establish ways to identify shared content and clinical experiences with other disciplines for joint planning and decision making
- Collaborate with other health care disciplines to develop, implement, and evaluate models of interdisciplinary education
- Seek opportunities to provide clinical experiences that foster an interdisciplinary approach
- Conduct research to evaluate outcomes (particularly patient outcomes) of interdisciplinary models of education and practice.

Overview: Existing Graduate Programs Preparing Nurses for Public Health Leadership

One strategy to strengthen the public health infrastructure is to prepare public health nurses at the graduate level to assume leadership roles in public health agencies. As part of a contract from the Division of Nursing to develop new models of interdisciplinary education providing strong public health preparation for master's level nurses, the School of Nursing at the University of Minnesota surveyed 74 schools of nursing to identify C/PHN curriculum content and describe faculty teaching in those programs. The graduate programs in C/PHN selected (of which 64 responded to the survey) were all accredited by the National League for Nursing (NLN) and had faculty with current ACHNE membership. Of the 64 schools, 30 offered a program in community/public health nursing. Twenty-three of the 30 schools sent catalog and other information regarding their program. A review of the final 23 respondents' catalogs helped to compare the curricula with those recommended by professional bodies. Further, the review identified differences between curricula from schools of nursing that are geographically close to a school of public health with those that are not. Catalog course descriptions and titles were used to identify whether curricula content adhered to standards.

Adherence to ACHNE Guidelines

Schools varied dramatically in their adherence to ACHNE guidelines. Review of the catalogs indicated that nearly all of the schools included content in theory, methodology, and leadership, slightly more than half (57%) included public health content, and three-fourths (74%) included content on C/PHN. A review of the catalogs further indicated that of the five courses recommended by the Council of Education for Public Health, epidemiology was the only course required by slightly more than half of the schools (57%). Fewer than half of the programs included the other recommended public health courses of administration (43%), biostatistics (22%), behavioral science (22%), and environmental health (17%).

Dual/Joint-Degree Programs

Another way to assure public health content is to establish dual or joint degrees between schools of nursing and schools of public health. Of the 30 schools reporting a graduate program in C/PHN, 10 schools of nursing reported having a dual-degree program with a school of public health, but only eight included a description or reference to a dual or joint degree in their literature. Administration was the most commonly offered dual-degree program.

Dual-Degree Programs Offered by Schools of Nursing in Survey

Dual-Degree Program	%
Administration	70
Maternal and Child Health	50
Occupational Health	50
Environmental Health	40
Biostatistics	40
Epidemiology	40
Health Education	40

The results of the survey indicate that a number of graduate-level community and public health nursing curricula do not adhere to the curricular guidelines established by ACHNE. An alarming number of C/PHN students are not required to take essential courses recommended to prepare them in the basic public health sciences. These gaps in C/PHN graduate education place nurses at a disadvantage in obtaining leadership positions in public health agencies. To become more effective, graduate PHN education must embrace interdisciplinary methods and courses to prepare students for the challenges and careers of the future.

Recommended Competencies

An examination of competencies recommended for health workers must guide the development of graduate programs for public health nursing.

Pew Health Professions Commission

In its first report (1991), the Pew Health Professions Commission recommended several competencies needed by all future health care workers to meet the needs of individual patients and the public in general:

Care for Community Health

- Understand the determinants of health
- Work with other providers in the community to integrate activities that promote, protect, and improve community health
- Appreciate the population's growing diversity
- Understand health status and health care needs in the context of different cultural values

Provide Contemporary Clinical Care

- Acquire and retain up-to-date clinical skills and apply them to meet public health care needs

Participate in the Emerging System, Including Expanded Accountability

- Function in new health care settings and interdisciplinary team arrangements that meet the primary health care needs of the public
- Emphasize high-quality, cost-effective, integrated health services
- Respond to increasing levels of public, governmental, and third-party participation in—and scrutiny of—the shape and direction of the health care system

Ensure Cost-Effective Care and Use Technology Appropriately

- Establish cost and quality objectives for the health care process

- Understand and apply complex (and often costly) technology appropriately

Practice Prevention and Promote Health Lifestyles

- Emphasize primary and secondary strategies of prevention for all people
- Help individuals, families, and communities maintain and promote healthy behaviors

Involve Patients and Families in Decision-Making Process

- Expect patients and their families to participate actively in decisions about personal health care, as well as in evaluating the quality and acceptability of such care

Manage Information and Continue to Learn

- Manage and continuously use scientific, technological, and patient information to maintain professional competence and relevance throughout practice life

Competencies for Private Sector/Managed Care

To better identify personnel with the appropriate training and qualifications to work well in a managed care setting, the Group Health Association of America (GHAA) developed a list of competencies:

- Ability to foster health promotion and deliver disease prevention services
- Ability to communicate information about health promotion and disease prevention services to enrollees and the community as a whole
- Understand and practice the principles of effective quality improvement
- Coordinate all aspects of care from a patient need perspective and resources at hand, both within the managed care organization and at the community level
- Detect, understand, and manage health risk problems in the home and the workplace
- Demonstrate leadership and team-working skills
- Use clinical and management information skills to analyze and improve proactive and practice patterns
- Assess the health-related needs of a defined population (McQueen, 1995, p. 8).

Public Health Competencies

Ibrahim, House, and Levine (1995) speculate that individuals graduating from an accredited school of public health or an accredited public health program will comprise the public health work force of the 21st century. These workers will "provide a population and prevention perspective to health care" and "work in any position concerned with improving the health status of a given population" (p. 19). In response to the criteria established by the council for the Education of Public Health, the Public Health Faculty/Agency Forum identified a set of competencies that can guide educational curricula for master's-prepared public health professionals:

Analytic Skills

- Define and identify a problem
- Select and define variables as they relate to public health issues
- Evaluate data sources

- Carry out program planning, implementation, and evaluation
- Make applicable inferences from data

Communication Skills

- Articulate ideas orally and in writing
- Present information accurately and effectively to a wide variety of audiences
- Participate as both a leader and an advocate of public health issues
- Constructively use resources such as the media to communicate public health information

Policy Development/Program Planning Skills

- Collect and summarize data relevant to an issue
- Clearly articulate policy options and their implications and feasibility
- Write concise policy statements
- Develop means of implementing and evaluating policy options
- Identify public health laws, regulations, and policies specific to programs

Cultural Skills

- Identify, understand, and sensitively respond to cultural diversity
- Identify the role of culture in public health issues
- Develop and adapt approaches to problems that include cultural differences

Basic Public Health Sciences

- Define, assess, and understand the health status of populations and contributing factors
- Comprehend research methods of public health sciences
- Apply the basic public health sciences to the prevention of chronic and infectious diseases and injuries
- Have an awareness of the historical development and structure of public health agencies at various levels of government

Financial Planning and Management Skills

- Budget and manage programs and personnel
- Develop strategies that address budget constraints and priorities
- Resolve conflict
- Comprehend the theory of organizational structure and its relationship to professional practice

General Leadership Competencies

Competencies for public health nursing leadership have not been identified explicitly in the literature of the past. In response to this gap, a factor analysis of an in-depth Delphi study of national PHN leaders conducted by the College of Nursing at

the University of South Carolina (Misener et al., 1996) identified 57 competencies within four dimensions required of nurses to be in public health leadership positions:

1. Political Awareness

Participants in the five-round national Delphi study identified political competencies expected of public health leaders as "using the political process to be advocated for clients, participating in community development, using information systems to complete community diagnoses, functioning as a member of a community agency, participating in policy and legislation development, and engaging in effective debates" (p. 10). Specific competencies within this dimension include politics, policy, communication, political models, political action, and social action.

2. Business Acumen

The South Carolina study concluded that business acumen is required for developing "strategic, business, and marketing plans, using information systems for management of human and financial resources, ensuring reimbursement for services provided, and employing quality management assurance programs" (p. 11). Competencies include skills in business, marketing, and fiscal management.

3. Program Leadership

Competencies identified for program leadership were the ability to apply epidemiologic research principles to develop health promotion programs, to appraise health policy limitations, and to implement strategies for policy change. Leadership, the study said, "is needed for community assessment that advocates for those at high risk and for program evaluation" (p. 11). The program leadership dimension encompasses evaluation skills.

4. Management Capabilities

Management capabilities "enable public health leaders to implement change" (p. 12). Competencies needed within this dimension include skills in problem solving, management of human resources, conflict resolution, functioning on interdisciplinary teams, and using specialty skills to direct staff.

Other Statements of Competencies for Leadership

General Leadership Competencies

To gain further insight into how best to prepare public health nurses for leadership positions we must also look at the definitions of leadership and leadership competencies from a broader perspective. An important distinction to begin with is the difference between leadership and management. Covey (1994) attempts to clarify the important distinctions between these two concepts:

> Management works within the paradigm. Leadership creates new paradigms. Management works within the system. Leadership works on the system. You manage "things"; but you lead people. Fundamental to putting, first things first in our lives is leadership before management; "Am I doing the right things?" *before* "Am I doing things right?" (pp. 27-28)

Another essential aspect of leadership is the necessity of followers. While the presence of others may aid in the management of certain tasks, it is not an irreplaceable quality of management. One can manage people, or one can manage tasks. To be a leader, however, requires that one has followers who believe in the vision provided by the leader. Since leadership is more focused on a way of being than specific acts of doing, it is often discussed in terms of individual characteristics and attributes instead of tasks and goals. Here are themes regarding competencies found throughout the leadership literature:

Integrity

Depree (1992) refers to integrity as the "linchpin" of leadership. Followers will watch for both public and private displays of behavior. Rosen (1996) relates this concept to the presence of principles and an ethically lived life. According to Rosen, principles are timeless and unchanging. Covey (1987) concurs that the core of integrity is based on fundamental principles.

Trust

Rosen (1996) believes that trust is "the glue that holds relationships together" (p. 74). Depree (1992) refers to two different forms of trust: To allow oneself to be vulnerable is to believe and trust in the abilities of others and to allow them the opportunity to strive for their best. Participating in teamwork is part of leadership. Predictability is the other key aspect of trust. Leaders must patiently and consistently tend to the vision that they have created with their followers. The leaders' force and direction in the organization must be easily perceived by the followers.

Curiosity/Learning

According to Depree (1992), leading is also a process of learning and discovering new ideas and concepts. Leaders challenge themselves as well as the status quo. Rosen (1996) states that leaders must be able to know their own strengths and weaknesses as well as those of the organization. The term *passion* as used by Bennis (1989) fits well with these concepts. Leaders must believe not only in the potential of life but also in the potential and capabilities of the people they work with during the journey.

Respect

This term applies in several different senses. Depree (1992) states that leaders must have respect for the future, regard for the present, and understanding of the past. He further argues that leaders must learn from past experiences and be accountable to the people they serve but have a sense of humility for the unforeseeable and certainly uncontrollable future. Rosen (1996) states that leaders must respect diversity. They must be aware of their own biases and insist on a culture that promotes mutual respect.

Guiding Vision

A leader sees the larger picture and is able to articulate the differences between the present reality and the vision to others. Further, a leader has a clear sense of how to obtain that vision (Bennis, 1989; Rosen, 1996). Depree (1992) includes the description of breadth in this concept. The leader sees the potential for all contributors to participate in the vision.

Comfort with Ambiguity

Depree asserts that all healthy organizations exhibit some degree of chaos. The task of a good leader is to ensure that this chaos fits with the vision. Bennis (1989) states that a basic ingredient of leaders is their ability to be daring. The leader embraces errors as a chance to learn and is willing to take risks.

While these characteristics are certainly not exhaustive, they describe some of the main skills, knowledge, and abilities that leaders of today must possess.

Competencies for Public Health Leadership

Leadership is an integral function of public health nurses within the changing health care system. The leadership ability of nurses cannot be left to chance and must be nurtured through education, mentorship, and experience. Several competencies for effective health care leaders have been identified as essential (Jeska, 1996). Competence is defined as the ability of the health care leader to apply critical thinking,

technical skills, and interpersonal forte toward producing a desired outcome within the dynamic changes of the health care setting. Six main areas of competence and their application to managed care are identified:

1. Intellectual Competence

Intellectual competence is the ability of the health care leader to use critical thinking toward achieving desired goals. Critical thinking provides a structure for comprehensive and systematic evaluation based on discriminating standards (Taylor, 1995). Jeska identifies specific characteristics of the health care leader who possesses this competence as the ability to "establish a vision," "maintain constancy of purpose," and "learn from the past to develop the future." Some specific tasks of this competency, according to Liang, Renard, Robinson, and Richards (1993), are the ability to specify a mission and objectives, evaluate resources, identify areas of ineffectiveness, and plan for change.

2. Moral Competence

Moral competence is the ability of the health care provider to maintain congruence with a moral and ethical code within the leadership role. Specific characteristics of this competence identified by Jeska are the ability to build trust, demonstrate integrity and passion, and serve as a symbol of credibility. Specifically, this includes facilitating client self-determination, accountability of resources, advocacy, and faithfulness to a professional code of ethics (Taylor, 1995; Tommet, York, Tomlinson, & Leonard, 1993).

3. Interpersonal Competence

Interpersonal competence is the ability of the health care leader to establish and sustain constructive relationships with colleagues, clients, and the health care team. Jeska identifies the characteristics of an effective leader in the area of interpersonal competence as "creating meaning through communication" and "working collaboratively with and believing in" the agencies followers. Some specific functions of this competency include the managerial abilities of building employee commitment, delegating, adjusting to environmental changes, setting performance standards, and establishing community connectedness (Anderson, 1989; Liang et al, 1993).

4. Technical Competence

Technical competence describes the health care leader's awareness and ability to access already-existing data resources, as well as to collect and analyze new information in a valid and reliable manner. These skills are partially developed through the understanding of epidemiology, biostatistics, and community assessment (Anderson, 1989).

5. Political Competence

Political competence involves a variety of relationship functions. These functions include mobilization of support from legislators and private sector representatives, strengthening citizen education and participation, representation through the media, and promoting interdisciplinary relationships (Anderson, 1989; Liang et al, 1993). Some of the specific skills needed in this position include effective communication, problem solving, and conflict-resolution abilities (Tommet et al, 1993).

6. Programmatic Competence

Programmatic competence is the ability of the health care leader to identify factors influencing health-related behaviors and to target interventions towards those behaviors. Specific interventions require knowledge of public policy as related to government and community resources and an understanding of the shift from the medical

model to the ecological model. The ecological model is concerned with family-centered care, interdisciplinary skills, and empowerment of the client and family. Knowledge of government systems is also important as related to influences in health care financing changes (Tommet et al, 1993).

Application in Managed Care

Managed care as one response to health care financing and delivery issues challenges the above competencies and even the most astute health care leader. The overall goal remains to emphasize health promotion and wellness and empower the consumer (Araujo & Carballo, 1993). Some personal characteristics identified by Jeska (1996) as necessary for a health care leader involved in managed care are the ability to "survive and thrive in ambiguity," "unleash creativity," and "sustain hope." Araujo and Carballo also identify the ability to retain the provider's motive for entering into the health care field as one of "preserving the values of human worth and dignity" in light of apparently small contributions in a large and seemingly uncontrollable health care system. The challenges and changes inherent in managed care arrangements create new issues for public health and its leaders.

Interdisciplinary vs. Discipline-Specific Education and Barriers to Collaboration

Health professionals wishing to achieve these leadership competencies should be educated in programs aimed at interdisciplinary learning and collaboration. Despite growing requests for interdisciplinary efforts in public health nursing education, institutions have been slow to respond with program changes, even though the evidence suggests it is worthwhile. Programs with an interdisciplinary focus documented in the literature have demonstrated beneficial learning experiences for both students and participating faculty (Bassoff, 1983; Laatsch, Milson, & Zimmer, 1986; Lough, Weinstein, & Abrams, 1986; Lynch, 1984; Sherman & May, 1991). These successes, however, have not induced a growing momentum for interdisciplinary collaboration in professional education.

An interdisciplinary education is particularly crucial for public health nurses prepared at the master's level. To develop recommended competencies and thus optimize their public health leadership potential, nurses must build on their nursing expertise while developing necessary skills in the scientific, administrative, and value foundations of public health. Nurses can best develop these skills when they have a solid academic foundation in nursing and public health. In addition, they must be provided opportunities to participate in field experiences and observe role models in which interdisciplinary teams of official public health professionals are addressing significant public health concerns (Campbell & King, 1992; Hale, 1982).

A lack of interdisciplinary education is a disadvantage not only to the students seeking to build skills and competencies for future careers but also to public health, public health nursing, and the public good. Nurses educated only in schools of nursing are less likely to interact with students in other public health disciplines; to gain knowledge in epidemiology, behavioral science, biostatistics, public health administration, and environmental health; to develop skills in assessing and developing population-based interventions; or to become effective members of interdisciplinary public health teams. Exposure to nursing faculty with interdisciplinary academic public health preparation may afford nursing students the opportunity to obtain public health content. Lack of adequate preparation in graduate public health nursing programs places the field as a whole at a disadvantage in providing future public health leadership. Non-nursing students in schools of public health are also disad-

vantaged, for they are not exposed to the expertise that nursing students and nursing faculty bring to the discussion of public health problems, and they have less opportunity to understand the contribution of public health nursing to help resolve public health problems.

If interdisciplinary education is desirable for both nursing and non-nursing students of public health, the question becomes, "Why is it not the norm for graduate public health nursing education?" One possible reason is a lack of collaboration between the involved schools. Kagan (1991) defines collaboration as "organizational and interorganizational structures where resources, power, and authority are shared and where people are brought together to achieve common goals that could not be accomplished by a single individual or organization independently" (p. 3). This definition of collaboration gives a clear sense of a process that goes beyond beginning efforts of coordination and/or cooperation. The result of a collaborative effort is not merely a sum of the two parts but a new entity that uniquely combines and builds upon the strengths of each collaborator.

Benefits of collaboration can be found throughout public health and nursing literature (Loos & McMillen, 1995; Hawken & Hellestad, 1990; Kelly, Maas, & Maske, 1990), although most fall into four categories (Kagan):

1. Relieving burdens caused by the scarcity of resources
2. Expanding the narrowness of problem conceptualization
3. Increasing efficiency of human service delivery
4. Achieving organizational change

The benefits of collaborative efforts raise the question of why more collaborative efforts regarding interdisciplinary education are not sought by schools. Along with the many benefits of collaboration come costs such as increased uncertainty, changes in roles and tasks, and the rebalancing or shifting of power (Dawkins, 1991). Organizations engaged in collaborative efforts must also work to reduce the associated costs of resource expenditures, loss of autonomy, and threatened identity (Iles & Randhir, 1990). Thus, the lack of collaborative efforts among health professional schools can be attributed to such barriers as funding, administrative support, faculty incentives, and interest (Connelly, 1978; Golden & Moore, 1987; Holden-Lund, Tate, & Hyde-Robertson, 1991; Larson, 1995). Perhaps more important, collaborative interdisciplinary efforts threaten to invade the turf that health professional schools have been unwilling to share.

Collaboration between Schools of Public Health and Schools of Nursing

In preparation for developing new curricular models to increase the public health component of master's level education provided to nurses interested in assuming leadership roles in public health agencies, the University of Minnesota surveyed 20 schools of public health and 20 schools of nursing located on the same campuses to determine the status of collaborative efforts and factors influencing collaboration between the schools. Sixteen schools of public health and 13 schools of nursing responded.

All 16 schools of public health reported that at least one graduate faculty member had a degree in nursing. A total of 42 faculty members from the 16 schools of public health had at least one degree in nursing, for a mean of 3.5 nursing degrees per school. Likewise, all 13 schools of nursing with a graduate program in C/PHN re-

ported that at least one graduate faculty member had a degree in public health. Twelve schools of nursing reported a total of 57 faculty members with at least one degree in public health for a mean of 4.75 public health degrees per school.

Collaboration Between Schools Surveyed

	SON (%)	*SPH (%)*
Collaborate with school on same campus	68.4 (n=13)	75 (n=12)
Collaborate with school on another campus	0	0
Increased collaboration within past 5 years	83.3 (n=10)	61.5 (n=8)

Twelve schools of public health and 13 schools of nursing reported collaborating on a wide variety of activities. There was not always agreement, however, on the extent of their collaboration. Schools of nursing and schools of public health reported that faculty from schools of nursing were more likely to have joint appointments and to serve on committees in schools of public health. There was strong agreement between schools of nursing and schools of public health in areas regarding recognition of expertise. It appears that faculty from the schools of public health had reduced access to the schools of nursing in terms of joint appointments and committee membership.

Collaboration between Schools in Research, Joint Projects, and Grants

	SON (%)	*SPH (%)*
Collaborate on research or joint projects with faculty from other school	77 (n=10)	67 (n=8)
Collaborate on training or demonstration grants with other faculty	62 (n=8)	50 (n=6)

With the exception regarding school of public health faculty teaching in schools of nursing, there was general agreement on the extent to which faculty taught in the other school. Schools of nursing generally reported more collaborative teaching activities than schools of public health. Four schools of public health (33%) nevertheless reported that their faculty taught courses in schools of nursing, while no schools of nursing reported that any courses in their schools were taught by school of public health faculty members.

Collaboration between Schools in Course Listings and Teaching

	SON (%)	*SPH (%)*
List courses offered by other school	62 (n=8)	58 (n=7)
Joint teaching of courses in subjects related to public heath nursing	25 (n=3)	25 (n=3)

The greatest amount of collegial activity was found in reports of course work accessed by students in both schools. All of the schools of nursing and 11 of the schools of public health (92%) reported that students registered in the school of nursing took courses in the school of public health. Likewise, 11 schools of nursing (84%) and 11 schools of public health (92%) reported that students registered in the school of public health took courses in the school of nursing.

Schools of nursing and schools of public health were most likely to have different perceptions in areas regarding student advisement. Schools of nursing were much more likely to report that their faculty served on school of public health examination committees and that school of public health faculty members served on school of nursing examination committees. There was closer agreement on the extent to which

there was joint advisement for students interested in public health nursing. Collaboration between a school of nursing and a school of public health appears to facilitate education for nurses pursuing a graduate program in public health. While collaboration is occurring between some schools of nursing and schools of public health, there are important areas requiring greater planned collaboration.

Part III

Development of New Models of Graduate Education to Prepare Nurses for Public Health Leadership

The Division of Nursing has responsibility at the federal level for nursing education and practice to assure an adequate workforce in nursing to meet the health care needs of the nation. The National Sample Survey of Registered Nurses (DHHS, 1992) noted that 15% of the nursing workforce of RNs worked in community/public health settings including state and local health departments. Of the nurses in public health, over 60% were prepared at less than the baccalaureate level, a level that historically has been seen as minimal for practice in public health nursing. Only 2.4% of RNs with a master's degree worked in public health settings, and no doctorally prepared nurses in the survey were primarily employed in public health settings.

These numbers represent a need for additional educational credentials for nurses in the public health nursing workforce. They also imply that although nurses are the single largest provider group in public health, they often lack the graduate preparation needed for leadership positions in state and local public agencies and other community health organizations. Nurses need public health nursing skills and knowledge, as well as the ability to manage programs. These numbers, in conjunction with the IOM study (1988), the Pew Report (1991), and the health needs of the people (1990) served as the impetus for the activities described in this report.

The most common educational pathway to a career in public health is a graduate degree from a school of public health or a school of nursing. Nurses who choose to pursue a master's degree program in public health without an accredited nursing component, however, lack the credentials for advanced practice in nursing or nursing education, and nurses who pursue a master's program in nursing without advanced preparation in public health may lack the knowledge and skills needed to provide leadership in official public health agencies.

The need for public health nurses with formal interdisciplinary educational preparation, then, is clear. This need was the driving force behind a contract from the Health Resources and Services Administration, Division of Nursing, to develop and implement an innovative graduate nursing program to educate nurses for advanced practice in public health agencies. The contract supported the development of graduate-level programs to prepare nurses for leadership positions in official public health agencies. The curricula were to incorporate public health nursing and public health science, including core-course preparation in biostatistics, epidemiology, and public health administration taught by an accredited school of public health, behavioral and environmental science courses taught jointly by public health and nursing faculty, and public health nursing courses taught in a school of nursing. Because the core courses were also required by the accrediting body for schools of public health, they

were referred to as the "essential public health sciences." Joint nursing and public health advisement, practicum experience, and research projects were also required. Another objective was to develop models for dual degree programs. An additional requirement was to publish and disseminate materials about the newly developed program, its content, and important organizational and academic considerations pertaining to development of the program.

The Division of Nursing contracted with the University of Minnesota School of Nursing to develop these interdisciplinary approaches to prepare public health nurses for leadership in public health agencies. The tasks essential to accomplish the goals of the contract included:

Meetings with the Project Officer

The project director and co-director met regularly with the project officer to discuss relevant issues, report findings, and review the work plan. The project officer made site visits to the University of Minnesota and met with appropriate faculty and administrators from both the School of Nursing and the School of Public Health. Meeting agendas included the project officer providing project staff with information on other federal initiatives that potentially could strengthen the project, fine-tuning the work plan to increase the probability that project goals were met, and examining how the movement toward managed care might affect public health departments and the need for graduates of this project.

Review of the Literature

A literature review identified additional areas of interest, including critical issues relevant to education of public health nurses for leadership, with particular attention given to models of interdisciplinary education. The broad literature review surveyed the fields of nursing, public health nursing, public health sciences (particularly epidemiology, behavioral sciences, environmental and occupational health, and maternal and child care), and public health and health care administration education. The literature review searched:

Primary Databases

- MEDLINE (MEDLARS onLINE)
- DISSERTATION ABSTRACTS ONLINE
- Nursing and Allied Health Literature (NAHL)
- National Technical Information Services (NTIS) Health Planning and Administration

Key Publications

- *The Future of Public Health* (IOM, 1988)
- *Position Statement for Addressing Nursing Education's Agenda for the 21st Century* (American Association of Colleges of Nursing, 1992)
- *Nursing's Agenda for Health Care Reform* (American Nurses' Association, 1991)
- *An Agenda for Nursing Education Reform* (National Library of Medicine, 1992)
- *Healthy America: Practitioners for 2005* (Pew Health Professions Commission, 1991)
- *Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century* (Pew Health Professions Commission, 1995)
- *Healthy People 2000* (Department of Health and Human Services, 1990)

Existing Dual or Joint Programs in Public Health Nursing and Public Health

The School of Nursing at the University of Minnesota conducted a survey of 20 schools of public health and 20 schools of nursing located on the same campus to identify existing efforts to prepare public health nurses for leadership roles in official public health agencies, as well as levels of collaboration, content, and interdisciplinary strategies.

Advisory Panel

The School of Nursing established a seven-member advisory panel to assist in the planning, implementation, and evaluation of the project for development of curriculum models. The panel members were all decision-makers in local and state public health agencies with responsibility for hiring public health nurses with graduate degrees. The advisory panel consisted of public health administrators including public health nursing directors from Minnesota, Wisconsin, Iowa, and South Dakota. They advised project staff on the changing environment and role of public health departments, recommended desired competencies of graduates, assisted with development of recruitment activities, and identified potential practicum sites and preceptors. Recommendations included a need to strengthen graduates analytical skills and to expand content on managed care and core public health functions. The panel strongly recommended providing for both part-time and full-time study and making the program more geographically accessible.

Development, Implementation, and Evaluation of Three Curriculum Models

The School of Nursing and the School of Public Health at the University of Minnesota jointly developed and implemented three curriculum models for public health nursing at the master's degree level. Model One is a master of science degree in nursing with an emphasis in public health nursing and a focus in the essential public health sciences. Model Two is a dual-degree program leading to a master of science degree in nursing and a master of public health degree. The MS/MPH dual degree program offers several options, including public health administration, maternal and child health, epidemiology, public health nutrition, community health education, and environmental/occupational health. Based on the experience of development and utilization of both models, a third model was developed leading to a master of science degree in nursing with an emphasis in public health nursing and a focus in public health and related fields.

Development of Presentations and Publications for Dissemination of Information Regarding Project

The proposed work plan included submitting abstracts describing project tasks to a range of nursing and public health journals and to national conferences. To date, one article has been published:

Josten, L., Clarke, P. N., Ostwald, S., Stoskopf, C., & Shannon, M. D. (1995). Public health nursing education: Back to the future for public health sciences. *Family & Community Health, 18*(1): 36-48.

Additional manuscripts are being written and submitted for publication, and nine presentations have been made:

1996 American Public Health Association, *Annual Meeting.* "Public Health Nursing Round Tables: Dual Degree Programs." New York.

1995 American Public Health Association, *Annual Meeting.* "Public Health Nursing Round Tables: Dual Degree Programs." San Diego, California.

1995 *Innovations in Nursing Education.* "Educating Leaders: An Interdisciplinary Effort." Toronto, Canada.

1995 University of North Carolina at Chapel Hill, *18th Annual Community and Public Health Nursing Conference,* "Are We Preparing the Community Health Nurse for the Future?" Keynote address, "Educating the Public Health/Community Health Nurse for the Future." Chapel Hill, North Carolina.

1994 American Public Health Association, *Annual Meeting.* "Preparation of PHNs for Leadership Positions: A Survey of Schools of Nursing and Schools of Public Health." Washington, D. C.

1994 American Academy of Nursing, *Annual Meeting and Conference.* "Education of Nurses for Public Health Leadership." Phoenix, Arizona.

1994 Association of Community Health Nursing Educators, *Annual Meeting.* "Preparation of PHNs for Leadership Positions: A Survey of Schools of Nursing and Schools of Public Health." San Antonio, Texas.

1994 National League for Nursing, *Council of Community Health Services Annual Meeting and Continuing Education Seminar.* "Future Direction for C/PHN Graduate Education: How Do We Get There from Here?" Portland, Oregon.

1994 University of North Carolina at Chapel Hill, *17th Annual Community and Public Health Nursing Conference.* "Transition or Trade-Off: What Do We Teach in Community Health after Health Care Reform?""Outcome Competencies: Survey of Existing Programs and Public Health Leadership." Chapel Hill, North Carolina.

Presentation of Final Report to Project Officer in Washington

The contract required a presentation of the final report to the Division of Nursing and other interested federal employees. The focus of this presentation included:

- Required competencies
- Public health content in MS curricula
- Dual degrees, MS/MPH
- Academic departmental challenges
- Joint faulty appointments/teaching
- Joint course listings
- Joint practicum experiences
- Research opportunities
- Preparing for a changing job market in public health
- Evaluation strategies
- Implications for the future

The final report was presented at HRSA headquarters in Rockville, MD, on August 11, 1996.

Degree Program Models Developed at the University of Minnesota

Model One was designed for nurses seeking a master of science degree (MS) in nursing with an emphasis in public health nursing and a focus in the essential public health sciences. Model Two was designed as a dual-degree program for nurses seeking a master of science degree in nursing with an emphasis in public health nursing and a master of public health (MPH) degree with emphasis in a selected area. Because of problems with implementation and student access to those models, Model Three was developed leading to a master of science degree in nursing with an emphasis in public health nursing and a focus in related fields to assure as much inclusion of professional recommendations as possible and provide student access to the curriculum. All three models included these courses:

Nursing	
Nurs 8010	Structure of the Discipline
Nurs 8011	Moral and Ethical Reasoning
Nurs 8014	Nursing Research
Nurs 5960	Advanced Public Health Nursing
Nurs 8042	Community-Based Public Health Nursing Interventions
Nurs 5963	Nursing Leadership for a Changing World
Nurs 5964	Public Health Nursing Leadership Practicum
Nurs 8050	Problems in Nursing (Master's Project)
Public Health	
PubH 5330	Epidemiology
Joint Listed/Taught	
Nurs 5883/PubH 5155	Issues in Environmental and Occupational Health
Nurs 8040/PubH 5733	Public Health Interventions across the Lifespan (Behavioral Science)

In addition, all students are required to meet a statistics course requirement, with all students in Models One and Two enrolling in biostatistics.

The School of Public Health at the University of Minnesota awards the MPH degree in several majors. The advisory panel, project staff, and faculty from both the School of Nursing and the School of Public Health reviewed the majors and determined which would best prepare nurses for leadership positions in public health. The result was a dual degree model with majors in public health administration (PHA), maternal and child health (MCH), epidemiology (EPI), environmental/occupational health (EOH), public health nutrition (NUTR), and community health education (CHE). The course descriptions, objectives, and topical outlines are listed in Appendix 1.

Development of each model followed this process: Project staff met with the School of Public Health major chair and curriculum coordinators to discuss recommended and required courses for both the MS with an emphasis in public health nursing and the MPH for the School of Public Health majors. A list of courses required for both degrees was generated as well as a list of courses required for each degree and a list of

courses that would meet elective requirements. Students were allowed to double-count up to 12 credits of shared course work between the two master's degrees. In addition, strategies for joint student advisement, practicum experiences, and completion of a master's project were developed. The proposed models were developed and approved by project staff, major chairs, directors of graduate studies in each school, project advisory panel, and each school's faculty committees.

Model One

Master of Science in Nursing with an Emphasis in Public Health Nursing and a Focus in the Essential Public Health Sciences

This model requires 45 total quarter credits.

Nursing	Essential Public Health Sciences
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**Nurs 5883/PubH 5155 (2 cr)** Environmental Health
Nurs 8014 (3 cr) Research in Nursing	**PubH 5414 (4 cr)** Biostatistics I
Nurs 5960 (3 cr) Advanced PHN	**PubH 5751 (3 cr)** Principles of Management in Health Services
Nurs 5963 (3 cr) Nursing Leadership for a Changing World	**Nurs 8040/PubH 5733 (3 cr)** PH Interventions across the Lifespan (Behavioral Science)
Nurs 5964 (4 cr) PHN Leadership Practicum	
Nurs 5902 (3 cr) Nursing and the Politics of Health Care	
Nurs 8042 (3 cr) Community Based PHN Interventions	
Nurs 8050 (4 cr) Master's Project	
Nurs Quarter Credits: 29	PubH Quarter Credits: 16

Model Two

Public Health Nursing and Public Health Administration
Sample MS/MPH Dual Degree Plan (Based on One-Year PHA Program)

This dual degree program requires 77 quarter credits.

NURSING	DOUBLE COUNT	PUBLIC HEALTH ADMINISTRATION
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**Nurs 8050[2] (4 cr)** Master's Project	**PubH 5414 (4 cr)** Biostatistics I
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**PubH 5707[2] (4 cr)** Master's Project	**PubH 5700 (3 cr)** Foundations of PHA Practice
Nurs 8014 (3 cr) Research in Nursing	**PubH 5330 (4 cr)** Epidemiology	**PubH 5739 (3 cr)** Needs Assessment and Assurance
Nurs 5960 (3 cr) Advanced PHN		**PubH 5740 (3 cr)** Organizational Behavior
Nurs 5963 (3 cr) Nursing Leadership for a Changing World		**PubH 5771 (4 cr)** Healthcare Financial Management
Nurs 5964[1] (4 cr) PHN Leadership Practicum		**PubH 5648 (1 cr)** Seminar: Grant Writing
Nurs 5902 (3 cr) Nursing and the Politics of Health Care		**PubH 5702 (3 cr)** Policy Issues in PHA
Nurs 8040/PubH 5733 (3 cr) PH Interventions across the Lifespan (Behavioral Science)		**PubH 5711 (4 cr)** Public Health Law
Nurs 8042 (3 cr) Community Based PHN Interventions		**PubH 5751 (3 cr)** Principles of Management in Health Services
Nurs 8060 (4 cr) PHN Intervention Practicum		**PubH 5791 (3 cr)** PH and Medical Care Organizations
		Nurs 5883/PubH 5155 (2 cr) Environmental Health
Nurs Quarter Credits: 32	Double Count Quarter Credits: 12	PubH Quarter Credits: 33

[1]Will be designed to fulfill requirements for public health field experience
[2]Joint advisement

Model Two

Public Health Nursing and Maternal and Child Health

Sample MS/MPH Dual Degree Plan (Based on Two-Year MCH Program)

This dual degree program requires 86 quarter credits.

Nursing	Double Count	Maternal and Child Health
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology	**PubH Scientific Basis of MCH (12 cr)**
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**PubH 5155/Nurs 5883 (2 cr)** Environmental Health	**Policy & Advocacy Skills (3 cr)**
Nurs 8014 (3 cr) Research in Nursing	**PubH 5751 (3 cr)** Principles of Management in Health Services	**PubH 5414 or PubH 5450 (3-4 cr)** Biostatistics
Nurs 5960 (3 cr) Advanced PHN	**PubH 5791 (3 cr)** PubH and Medical Care Organizations	**PubH 5623 (3 cr)** Principles of MCH Research
Nurs 5963[2] (3 cr) Nursing Leadership for a Changing World		**PubH 5651 or PubH 5910 (2 cr)** Critical Readings or Critical Review
Nurs 5964[1] (4 cr) PHN Leadership Practicum		**PubH 5631 (3 cr)** MCH Program Evaluation
Nurs 5902[2] (3 cr) Nursing and the Politics of Health Care		**PubH 5610 (3 cr)** Principles of MCH
Nurs 8040/PubH 5733 (3 cr) PH Interventions across the Lifespan (Behavioral Science)		**PubH 5739 (3 cr)** Community Health Assessment
Nurs 5965[2] (3 cr) Special Problems of Management of Community Based Nursing Services		**PubH 5771 or PA 5123 (3-4 cr)** Healthcare Financial Management or Financial Management in Public & Non-Profit Organizations
Nurs 8060[1] (4 cr) PHN Intervention Practicum		
Nurs 8042 (3 cr) Community Based PHN Interventions		
Nurs 8050[1] (4 cr) Master's Project		
Nurs Quarter Credits: 39	Double Count Quarter Credits: 12	PubH Quarter Credits: 35-37

[1] Joint Advisement
[2] Substitutes for MCH requirement

Model Two

Public Health Nursing and Epidemiology

Sample MS/MPH Dual Degree Plan (Based on Two-Year EPI Program)

This dual degree program requires 89 quarter credits.

NURSING	DOUBLE COUNT	EPIDEMIOLOGY
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology I	**PubH 5340 (4 cr)** Epidemiology II
Nurs 8011 (3 cr) Moral and Ethical Positions in Nursing	**PubH 5155/Nurs 5883 (2 cr)** Issues in Environmental and Occupational Health	**PubH 5341 (4 cr)** Epidemiology III
Nurs 8014 (3 cr) Research in Nursing	**PubH 5751 (3 cr)** Principles of Management in Health Services Organizations	**PubH 5391(3 cr)** Behavioral Epidemiology
Nurs 5960 (3 cr) Advanced PHN	**PubH 5345 (3 cr)** Epidemiologic Methods: Data Collection	**PubH 5379 (2 cr)** Epidemiology Master's Project Seminar
Nurs 5963 (3 cr) Nursing Leadership for a Changing World		**PubH 5450 (4 cr)** Biostatistics I
Nurs 5964[1] (4 cr) PHN Leadership Practicum		**PubH 5452 (4 cr)** Biostatistics II
Nurs 8040/PubH 5733 (3 cr) PH Interventions across the Lifespan (Behavioral Science)		**PubH 5454 (4 cr)** Biostatistics III
Nurs 8042 (3 cr) Community Based PHN Interventions		**PubH 5420 (2 cr)** Statistical Computing I
Nurs 5902 (3 cr) Nursing and the Politics of Health Care		**PubH 5383 (4 cr)** Pathobiology of Human Disease
Nurs 8060[1] (4 cr) PHN Intervention Practicum		**PubH 5384 (4 cr)** Human Physiology
Nurs 8050[1] (4 cr) Master's Project		**PubH 5335 (3 cr)** Epidemiology and Control of Infectious Diseases
		PubH 5387 or PubH 5386 (3 cr) Cancer Epidemiology *or* Public Health Aspects of Cardiovascular Diseases
Nurs Quarter Credits: 36	Double Count Quarter Credits: 12	PubH Quarter Credits: 41

[1] Joint advisement

Model Two

Public Health Nursing and Environmental/Occupational Health
Sample MS/MPH Dual Degree Plan

This dual degree program requires 94 quarter credits.

NURSING	DOUBLE COUNT	*ENV/OCC Health*
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology	**PubH 5168/Nurs 5885 (1 cr)** Theory/Practice: OH Field Experience
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**PubH 5751 (3 cr)** Principles of Management in HSOs	**PubH 5156 (3 cr)** Environmental Health Survey
Nurs 8014 (3 cr) Research in Nursing	**PubH 5791 (3 cr)** Public Health and Medical Care Organizations	**PubH 5154/Nurs 5882 (4 cr)** Field Experience: EOH
Nurs 5960 (3 cr) Advanced PHN	**PubH 5281 (2 cr)** Topics in Occupational Medicine	**PubH 5159 (2 cr)** Seminar
Nurs 5963 (3 cr) Nursing Leadership for a Changing World		**PubH 5414 (4 cr)** Biostatistical Methods I
Nurs 5964[1] (4 cr) PHN Leadership Practicum		**PubH 5771 (4 cr)** Financial Management in HSOs
Nurs 8040/PubH 5733 (3 cr) PH Interventions across the Lifespan (Behavioral Science)		**PubH 5194 (3 cr)** Injury Prevention in Workplace, Community, and Home
Nurs 8042 (3 cr) Community Based PHN Interventions		**PubH 5192 (3 cr)** Occupational Safety
Nurs 5902 (3 cr) Nursing and the Politics of Health Care		**PubH 5158 (3 cr)** Health Risk Evaluation
Nurs 8060[1] (4 cr) PHN Intervention Practicum		**PubH 5218/Nurs 5886 (3 cr)** Field Problems in Occupational Health
Nurs 8050[1] (4 cr) Master's Project		**PubH 5166/Nurs 5884 (3 cr)** Planning Employee Health Services and Cost Containment
		PubH 5211 (3 cr) Industrial Hygiene Engineering
		PubH 5167/Nurs 5680 (3 cr) Theory and Practice of Occupational Health
		PubH 5267 (3 cr) Env/Occ Toxicology
		PubH 5250 (4 cr) EOH Master's Project
Nurs Quarter Credits: 36	Double Count Quarter Credits: 12	PubH Quarter Credits: 46

[1]Joint advisement

Model Two

Public Health Nursing and Community Health Education
Sample MS/MPH Dual Degree Plan

This dual degree program requires 85 quarter credits.

NURSING	DOUBLE COUNT	COMMUNITY HEALTH EDUCATION
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology	**PubH 5025 (1 cr)** Orientation Seminar
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**PubH 5155/Nurs 5883 (2 cr)** Environmental Health	**PubH 5027 (3 cr)** Community/Environmental Approaches to Health Behavior Change
Nurs 8014 (3 cr) Research in Nursing	**PubH 5751 (3 cr)** Principles of Management in Health Services	**PubH 5028 (3 cr)** Organizational/Institutional Approaches to Health Behavior Change
Nurs 5960 (3 cr) Advanced PHN	**PubH 5026 (3 cr)** Soc/Psych Approaches to Health Behavior Change	**PubH 5414 (4 cr)** Biostatistical Methods I
Nurs 5963 (3 cr) Nursing Leadership for a Changing World		**PubH 5415 (4 cr)** Biostatistical Methods II
Nurs 5964 (4 cr) Leadership Practicum		**PubH 5852 or XXXX (3 cr)** Program Evaluation or Applied Research Methods
Nurs 8040/PubH 5733 (3 cr) PH Interventions across the Lifespan (Behavioral Science)		**PubH (15 cr)** 5 CHE Intervention courses
Nurs 8042 (3 cr) Community Based PHN Interventions		**PubH 5096[1] (4 cr)** Master's Project
Nurs 5902 (3 cr) Nursing and the Politics of Health Care		
Nurs 8060[1] (4 cr) PHN Intervention Practicum		
Nurs 8050[1] (4 cr) Master's Project		
Nurs Quarter Credits: 36	Double Count Quarter Credits: 12	PubH Quarter Credits: 37

[1] Joint Advisement

Model Two

Public Health Nursing and Public Health Nutrition
Sample MS/MPH Dual Degree Plan

This dual degree program requires 96 quarter credits.

NURSING	DOUBLE COUNT	NUTRITION
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology	**PubH 5414 (4 cr)** Biostatistical Methods I
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**PubH 5751 (3 cr)** Principles of Mgmt in HSO's	**PubH 5900 (3 cr)** PH Nutrition: Programs and Principles
Nurs 8014 (3 cr) Research in Nursing	**PubH 5791 (3 cr)** Public Health and Med. Care Org.	**PubH 5902 (3 cr)** Maternal and Infant Nutrition
Nurs 5960 (3 cr) Advanced PHN	**PubH 5152 (2 cr)** Environmental Health	**PubH 5907 (2 cr)** Dietarty Assessment
Nurs 5963 (3 cr) Nursing Leadership for a Changing World		**PubH 5908 (2 cr)** Anthropometric Assessment
Nurs 5964 (4 cr) PHN Leadership Practicum		**PubH 5914 (3 cr)** Nutrition Intervention
Nurs 8040/PubH 5733 (3 cr) PH Interventions across the Lifespan (Behavioral Science)		**PubH 5932 (3 cr)** Nutrition: Adults & the Elderly
Nurs 8042 (3 cr) Community Based PHN Interventions		**PubH 5933 (3 cr)** Nutrition: Health/Disease Relationships
Nurs 5902 (3 cr) Nursing and the Politics of Health Care		**PubH 5935 (3 cr)** Child & Adolescent Nutrition
Nurs 8060 (4 cr) PHN Intervention Practicum		**PubH TBA (3 cr)** Nutrtion Policy Course
Nurs 8050[1] (4 cr) Master's Project		**PubH 5906 (3 cr)** Field Experience
		PubH 5906 (6 cr) Block Field Experience
		PubH 5901 (2 cr) Seminar: PH Nutrition
		PubH 5806 (3 cr) Principles of PH Research
		PubH 5910 (2 cr) Critical Rev of Research: PH Nutrition
		PubH 5909[1] (3 cr) Topics: PH Nutrition Master's Project
Nurs Quarter Credits: 36	Double Count Quarter Credits: 12	PubH Quarter Credits: 48

[1]Joint advisement

Model Three

Sample MS with emphasis in Public Health Nursing and a Focus in Public Health and Related Fields

This program requires 45 quarter credits.

NURSING	SUPPORTING PROGRAM
Nurs 8010 (3 cr) Structure of the Discipline of Nursing	**PubH 5330 (4 cr)** Epidemiology
Nurs 8011 (3 cr) Moral/Ethical Positions in Nursing	**Nurs 5883/PubH 5155 (2 cr)** Environmental Health
Nurs 8014 (3 cr) Research in Nursing	**Elective (4 cr)** Statistics
Nurs 5960 (3 cr) Advanced PHN	**Elective (3 cr)** Management
Nurs 5963 (3 cr) Nursing Leadership for a Changing World	**Nurs 8040/PubH 5733 (3 cr)** PH Interventions across the Lifespan (Behavioral Science)
Nurs 5964 (4 cr) PHN Leadership Practicum	
Nurs 5902 (3 cr) Nursing and the Politics of Health Care	
Nurs 8042 (3 cr) Community Based PHN Interventions	
Nurs 8050 (4 cr) Master's Project	
Nurs Quarter Credits: 29	Supporting Program Quarter Credits: 16

Challenges in Achieving the Models Developed at the University of Minnesota and Strategies to Respond to Them

Developing and implementing model programs between a school of nursing and a school of public health present challenges in several broad areas:

Institutional Policies

Institutional policies built around differing professional hierarchies and turf issues can present barriers to interdisciplinary educational programs, especially those leading to dual degrees. Working between two schools, even within the same university, can be difficult, since each school has its own policies, faculty, committee structures, and graduation requirements.

At the University of Minnesota, the master of science degree (MS) in nursing is conferred by the Graduate School, the master of public health degree (MPH) by the School of Public Health. Both schools require students to take at least 60% of course work for a specific master's degree (whether MS or MPH) as a registered student in that school. This is not the only policy barrier, since students may be registered in only one school at a time. In addition, both schools require students to be enrolled during at least one fall quarter so that they can count these students in their annual enrollments, determined only in the fall quarter. Furthermore, course work taken in the other school is considered equivalent to course work taken at another university, and students must go through a petition process with limits on the number of credits allowed.

Institutional policies are designed to guarantee that students complete the majority of their educational course work at the institution conferring the degree, thus ensuring a quality education for students and a reputation of excellence for the institution. Institutional policies also ensure that funding is directed to the appropriate school and that all students are reported in enrollment statistics.

Such policies, however, also contribute to a climate of competition between schools that reduces collaboration. While such institutional policies establish minimum requirements for completion of a single degree, they do not serve students who have already elected to surpass the minimum requirements of an institution in pursuing a dual degree. For dual-degree students, residency and transfer rules serve only as barriers, seriously eroding their ability to meet their goals. In seeking to ensure that students meet minimal requirements, therefore, institutional policies often penalize and discourage students seeking to exceed the minimum, such as dual-degree students. Clearly, more flexibility and cooperation between schools is required to foster minor and/or dual-degree options.

Several approaches were used to minimize these problems. Meetings were held with the staff of the Graduate School to obtain information on similar programs involving other schools at the University of Minnesota as well as ideas about reducing institutional policies as barriers. Similar joint meetings were held with the directors of graduate studies and administrators of the schools. In the case of institutional policies that could not be modified, student advisement was critical to reducing the impact of the barriers. To facilitate student advisement individual plans of study were developed for each student by faculty members in consultation with project staff. In addition, both student and faculty handbooks were developed. Since project staff included faculty from both schools, the knowledge of institutional policies and procedures facilitated development of strategies to reduce the barriers of differing institutional policies.

Administrative Commitment

Support of school administrators in both schools—and in all administrative units—is essential to the success of all degree programs. Administrators must clearly articulate that minors or dual degrees are legitimate options. Since a dual degree assumes that some courses in one school can be substituted for similar courses in another school, both schools must support the option, which requires careful negotiation beforehand.

Schools may differ in administrative organization. Schools of public health, for example, are more likely than schools of nursing to have several separate administrative units, each with its own requirements for admission, progression, and graduation. Where this is the case, as at the University of Minnesota, the support of the dean's office is not sufficient; each of the separate administrative units or departments must also signal commitment.

Dual-degree programs between schools of nursing and schools of public health are most likely to center around public health administration, maternal and child health, occupational and environmental health, and community health education and promotion. Other possibilities for dual degrees, however, focus on epidemiology, nutrition, international health, health services research and policy, and biostatistics. What begins as one dual degree program for public health nurses, therefore, may emerge as multiple programs, each with different requirements for course work, admission, and graduation. Strong, continuing administrative support at every level and in all administrative units is critical if such programs are to flourish.

The University of Minnesota was fortunate to have the strong support of both Dean Sandra Edwardson of the School of Nursing and Dean Edith Leyasmeyer of the School of Public Health for development of the dual-degree program. This support included communicating with faculty and school committees their belief in the importance of these models. They facilitated meetings with key faculty and included information about these options in their school's recruitment activities. In addition, one School of Public Health scholarship fund stipulating that the recipient be a nurse in the School of Public Health was set aside for dual degree nursing students.

Administrative commitment does not overcome all barriers. The majority of nursing students work and attend school part time. Although the School of Nursing offers courses in the evenings on a one-day-a-week basis, the School of Public Health has a different schedule for most of its courses. While School of Public Health administrators are sympathetic to part-time students, its faculty members make course scheduling decisions. In addition, approximately half the students seeking an MS from the School of Nursing attend classes at a distant site. Although some School of Public Health courses are available at a distant site, not enough were available for students to obtain either a minor or a dual degree from the School of Public Health.

Evolving Curricula

The health care system is changing so rapidly that educational institutions must constantly update and evaluate their curricula to prepare students for public health leadership. Yet multiple requirements by a school of nursing and a school of public health, coupled with the requirements specific to each public health major, leave little room for the flexibility that students often need. A unilateral change in requirements by one administrative unit, for example, can lead to profound consequences for the entire dual degree program. Each administrative unit has its own curriculum committee, in addition to a schoolwide curriculum committee. Curricular changes may take months to complete, thus delaying development of a dual-degree program.

At the University of Minnesota, for instance, the dual-degree program for public health nurses interested in maternal and child health was revised three times before it

was implemented because of such unilateral decision-making. The first dual-degree program approved between the School of Nursing and the School of Public Health (in public health administration) was thrown into limbo two years later when the PHA program was merged with another administrative unit that had not been party to the initial negotiation. Some degree of constancy and predictability, therefore, is necessary to develop a successful dual-degree program.

Faculty Involvement

While favorable institutional policies, administrative support, and stable curricula are all critical for a successful dual degree program, active involvement of the faculty in both schools is also essential. University culture often mitigates against this all-important factor. Universities reward faculty members for funded research and independent development of courses in their areas of expertise, not for the committee work, team teaching, and hours of advising additional students required for a successful dual degree program.

Other factors of university culture also come into play. Faculty members, for example, value their autonomy to establish the courses they teach, the course schedules, and the prerequisites, as well as to develop curriculum for major programs. Developing a dual-degree program, however, implies at least a partial surrender of such autonomy as faculty members from each school move into the turf of the other. It also means that faculty in both schools must be willing to agree that courses in the other school may be substituted to achieve the desired outcome.

Developing a dual-degree program requires involving faculty across schools, as well as a commitment of time to plan an additional program that satisfies the objectives of each existing program *and* the new one. The first step to develop such a program is to bring faculty from both schools together to exchange information, debate the value and sustainability of specific courses, reach agreement on sequencing and availability of courses, and agree on internship and research expectations. Achieving adequate involvement depends upon respect and recognition of each other's expertise. This can best be achieved through ongoing and positive exchange over an extended period of time. The respective faculties at the University of Minnesota achieved sufficient cooperation to develop six separate dual-degree options. Faculty members have been willing to jointly advise students and participate in joint final oral examinations, but they have been less willing to change the hours their courses are offered. Some courses are offered several times a week for an hour in the middle of the day, which has prohibited nurses who cannot leave work or who live a distance from the campus from pursuing either a minor in essential public health sciences or a dual-degree option in the School of Public Health.

Student Recruitment/Barriers

The final test of the success of these programs is their ability to attract excellent students and to produce graduate nurses who are prepared to assume leadership roles in public health. Recruiting students to the MS/MPH dual degree and the minor in essential public health sciences programs at the University of Minnesota has proved challenging. The dual degree program—despite careful planning—takes longer than either program alone (although certainly not as long as if taken sequentially). For some students, the additional number of credits presents a significant financial barrier. For others, the increased length of time to graduation is a serious impediment. For still others, especially students enrolled on a part-time basis or who travel some distance to attend classes, class scheduling and the lack of long-distance options makes pursuit of a dual degree almost impossible.

Dual-degree programs generally lack flexibility. At the University of Minnesota, as noted, each school requires core content and each imposes residency and course

transfer policies that leave little room for student or advisor flexibility. A student must decide at the outset whether to pursue a dual instead of a single degree in order to complete the necessary paperwork. Faculty members peripherally involved in program development may not have the knowledge necessary to advise students properly, while other faculty may view the dual-degree program as an aberration and not encourage students to pursue it.

One of the most important barriers to recruiting students for graduate-degree programs, however, may be the rapidly changing health care field itself. In Minnesota, where the penetration of managed care is among the greatest in the United States, the availability of traditional public health jobs has been uncertain. Although some of this uncertainty still exists, the number of leadership opportunities for graduate public health nurses has increased. In addition, managed care organizations are competing with public health agencies for these graduates, and since they tend to pay more, they are more attractive to students. Students, therefore, do not see as attractive a job market in the traditional public health agencies. Furthermore, students with full-time positions in public health are unlikely to leave them for full-time graduate study. Related to this issue is whether students are able to secure funding for graduate studies. To date, all the dual-degree students have received some type of funding ranging from federally supported traineeships (e. g., NIOSH) to research assistantships at the University of Minnesota. Securing educational funds appears to be a strong factor in a student's ability to attend school during the day or on a full-time basis.

The original intent of the model programs at the University of Minnesota was to prepare public health nurses for leadership positions in official public health agencies. Recent changes in the health care market place, however, demand reevaluation of this limited objective. Managed care organizations are hiring more masters prepared public health nurses. This project has contributed to the preparation of graduates for public health positions in managed care systems. Another important barrier is the lack of clarity as to whether obtaining a minor in essential public health sciences or a dual degree results in significantly improved employment opportunities. In the three years of the contract, two students have enrolled in Model One, 12 have been admitted to Model Two (three in the PHA major, four in MCH, and five in EOH), and 25 have been admitted to Model Three. The availability of this project has also helped to increase nursing faculty and student awareness of the potential for other dual-degree opportunities in the School of Public Health. Project staff have facilitated the development of dual-degree programs for two students in the nursing practitioner and nursing administration programs.

Problems in developing graduate-level public health nursing programs with a minor in the essential public health sciences were also encountered. The School of Nursing encountered delays in implementing a master of science degree in nursing with a minor in essential public health sciences (Model One) because of curriculum changes within the School of Public Health. As part of a process to redefine its relationship with the Graduate School, the School of Public Health dropped its master of science in public health program, increased the minor credit requirement from nine credits to 12, and changed specific requirements for the minor. While this process required decisions by the graduate faculty in public health as well as approval by the Graduate School, the new minor was more flexible than the previous one.

Another problem is related to content of some courses offered by the School of Public Health. Most of the school's courses meeting the behavioral science requirement were administrative courses, not health promotion and behavioral change courses as required by the contract. The School of Nursing faculty took the lead to develop a

health promotion/disease prevention course. Getting the course approved by the School of Public Health and cross-listed took most of the contract's first year.

Other difficulties concerned course availability and class scheduling, specifically making School of Public Health courses in biostatistics and management more available to nursing students pursuing a minor in essential public health sciences. During the three years of the project, the biostatistics courses were offered only during the day—a serious problem for working students. Project staff had several discussions with administration and faculty in the School of Public Health to determine resolution of this dilemma. Beginning in the fall of 1996, the School of Public Health will offer biostatistics during the early evening to accommodate working students.

Because of the difficulties experienced in student participation in models one and two, a third model was developed that met all of the ACHNE recommendations but not all of the CEPH requirements. This model includes epidemiology, environmental health, and a behavioral science course (PH Interventions across the Lifespan) from the School of Public Health. Students unable to take biostatistics took other graduate-level statistic courses. Content in biostatistics was added to Nurs 5960 Advanced Public Health Nursing to supplement students' statistical preparation for public health. Instead of the required public health management course, all students take a similar course in nursing leadership.

Evaluation Components

Process evaluation included systematic monitoring of program plans and procedures and their implementation with input from the advisory panel. The ongoing evaluation process was used to make programmatic adjustments and assure achievement of stated goals and objectives. Existing evaluation procedures in the School of Nursing and the School of Public Health regarding student recruitment and admissions, course evaluations, faculty teaching, and student accomplishment of curricular requirements were used as part of the ongoing evaluation. Faculty co-advisors in both schools worked collaboratively with students regarding master's projects and clinical placements. New procedures such as focus groups with students were implemented to assess the effectiveness of interdisciplinary models and the integration and collaboration between the two schools.

Focus groups were held with students from all three models who were nearing the end of their course work or who had recently completed their course work. Each focus group began with an informal discussion of the strengths and weaknesses and an assessment of the different models. Students were asked to complete questionnaires assessing the degree to which competencies recommended by the Pew Health Commission were addressed in the different models. Students' perceptions discussed in the focus groups addressed several broad areas:

Job Prospects

Students believed that participating in the program had expanded their capabilities and technical skills. In addition, many of them felt more confident in their ability to perform duties at their present work site. Some students were concerned about the availability of jobs that would require their skills and meet their career advancement goals. This comment was of particular concern to students residing in and around Minneapolis and St. Paul. Several students mentioned earning potential. Before starting school students working in critical care were making $40,000 to $50,000. After completing their master's degrees, they were offered $30,000 to $35,000 from official public health agencies. Some students believed that once they got into the public health market their degrees would help them advance faster in leadership positions

but that they would initially have to take a large pay cut. A number of students already working for public health agencies said they felt capable of taking managerial positions and were beginning to be recruited for such positions.

Changes in the Health Care System

Students thought that the current and approaching changes in the health care delivery system might provide them with new opportunities. Students seemed to think that their skills and knowledge would be applicable to both the private and public sectors of health. Students agreed that their graduate education would be an asset in defining their places in the evolving health care system. Students believed that while enrolled in the program they gained a broader awareness of the changes occurring and the language of the transitions.

Differences between School of Nursing and School of Public Health

All of the students agreed that the two schools had some major differences in terms of the type of student attending and the class environments of each. The general feeling was that the School of Public Health is primarily composed of full-time students who can attend classes during the day while the School of Nursing is primarily composed of part-time students attending classes in the evening. This mixture of scheduled offerings was burdensome for some students taking classes at both schools (e.g., classes starting at 8:00 or 9:00 A.M. and classes ending at 6:00 or 7:00 P.M.) This situation was further complicated for students who wanted or needed to continue outside employment.

Dual-degree students also thought that one program (either the School of Nursing or the School of Public Health) was "home base" for getting information about their programs, scheduling, filing papers, and advising. Where students start out may affect their perceptions and experiences within each school and program.

Master's Project

Students in the dual-degree option experienced the challenge of coordinating their master's projects with two different advisors. Having two advisors nevertheless provided the benefit of getting another perspective or alternative suggestions. One student thought students should have their master's projects (Plan B) planned out early in their programs. Most students thought that the School of Nursing focused its research course more on preparing students and getting them started on their Plan B projects than the research courses offered in the School of Public Health.

Areas Needing Strengthening

Students believed that the basic biostatistics course does not provide enough skills to do primary data analysis. Most found that they needed more computer skills than they had anticipated when entering the program. They didn't want computer skills to be a requirement but thought it should be integrated into courses. Fiscal and human resource management skills were missing in the curriculum for students in models one and three. Students believed that practical experience through the required practicum could help them develop such skills. Many students thought they did not have a clear understanding of what it means to be an advanced-practice public health nurse. Expectations of their roles in the health care and public health arenas were unclear, and they had difficulty explaining their specialties to others.

Overall Learning from Master's Project

Several students believed that completing the master's project increased their awareness of the evolving nature of research. In addition to increasing self-confidence in their own research skills, the experience has also made them think about how they would apply research principles to issues at work.

Students were also asked to respond to a set of competencies adapted from the Pew recommendations (1990). Students responded in the affirmative that their educational programs had adequately addressed these competencies. Almost all believed their educational programs had adequately addressed ethical decisions, fostering preventive behaviors, involving patients and families as partners in health care, ensuring access to health care, and understanding the needs of diverse cultural groups. Students were mixed in their perceptions of how well the educational programs addressed evaluation of the appropriateness of complex and costly technology and how to manage large volumes of scientific information.

Students in the dual-degree program responded to an additional questionnaire assessing the program's strengths and potential growth areas. Areas of strength included providing leadership in public health nursing, participating in decision-making as part of a multidisciplinary management team, developing coalitions with formal and informal community organizations, health care providers and business and consumer groups, and designing programs that will impact public health. As areas needing additional emphasis within the various models, students listed using information systems, managing agency resources, and providing leadership in public health policy-making.

Part IV
Conclusions and Recommendations

Nurses aiming for leadership positions in official public health agencies need a strong background of knowledge in the public health sciences and interdisciplinary skills. Graduate programs for nurses can promote knowledge and skill development by arranging for the same interdisciplinary public health courses as those taken by students from other disciplines who are preparing for careers in public health. Many of the community health or public health nursing graduate programs in the United States do not include recommended public health courses. The existing gaps in community and public health nursing graduate education place nurses at a disadvantage in obtaining leadership positions in public health agencies.

This project has provided models to allow every graduate public health nursing student the opportunity to obtain the knowledge and develop the skills and attitudes necessary to lead through interdisciplinary collaboration with other public health professionals. This educational preparation can help achieve the nation's health goals. Collaborative and interdisciplinary models of graduate education to prepare nurses for leadership positions in official public health agencies can be developed. Students will enroll in these programs.

Barriers to developing these models include such things as institutional policies, frequent curriculum changes, the difficulty of part-time nursing students accessing courses in a school of public health, and changes in the job market for graduates. Nursing students who participate in these model programs can achieve competencies that have been recommended by both nursing and public health leaders. They can also obtain employment in which they can use these competencies. In addition, students preparing for other public health careers enroll in these models because they are viewed as an excellent approach to prepare for a dynamically changing health care field.

The literature is silent on the relationship between interdisciplinary education and effective public health leadership. Given the lack of information, common sense and professional opinion suggest that schools of nursing preparing leaders for public health must assure that their students have access to recommended public health courses. In addition, they should take the initiative in establishing interdisciplinary, collaborative graduate programs. Whether they share a campus with a school of public health or—in the much more prevalent situation—they are some distance from one, the recommendation is the same. To become more effective, graduate public health nursing education should embrace interdisciplinary methods to prepare students for current and future challenges and careers. Interdisciplinary methods are best implemented through model curriculums developed jointly by schools of nursing and schools of public health.

The question of whether collaborative interdisciplinary curricula are an effective approach for educating public health nurses for leadership positions needs further research. Until additional data are available, the models developed through this project can serve as guidelines for schools of nursing.

The Minnesota survey of schools of nursing and schools of public health showed an increasing interest in collaborative activities such as developing dual degree programs in both schools of nursing and schools of public health. Developing such programs requires close communication between the administrators and the faculty within each school so as to eliminate barriers such as inflexible institutional and administrative structures, individual faculty interests, and difficulties in student recruitment. Such barriers can be overcome only when faculty and administration come together to identify common interests and strengths. Support from school administrators and faculty is essential in developing and implementing interdisciplinary educational models for the enhancement of public health leadership.

The identified health needs and goals of this nation demand a strengthening of public health leadership. Preparing more nurses—already the largest group of health workers—to fill the leadership gap is an important strategy in addressing the nation's health needs. Schools of nursing can play a significant role in filling that gap by offering interdisciplinary graduate education for nurses that includes the public health sciences. This project has demonstrated the feasibility and acceptability of new models of graduate education to prepare nurses for public health leadership.

References

Aiken, L. (1995). Transformation in the nursing workforce. *Nursing Outlook, 43*(5), 201-209.

American Association of Colleges of Nursing. (1995, March). Position statement. Washington, DC: Author.

American Nurses' Association. (1986). *Standards of community health nursing practice.* Washington, DC: Author.

American Public Health Association. (1995, April). Health behaviors. *Nation's Health,* p. 15.

Anderson, E. (1989). Public health content in nursing curricula. *Nursing Outlook, 37*(5), 233-235.

Aroskar, M. (1995). Exploring ethical terrain in public health. *Journal of Public Health Management and Practice, 1*(3), 16-22.

Araujo, M. D., & Carballo, S. M. (1993 June, 22-24). Creating the future. *Health Progress,* 58.

Association of Community Health Nurse Educators. (1992). *Essentials of master's level community health nursing education for advanced practice.* Washington, DC: Association of Community Health Nurse Educators.

Bassoff, B. Z. (1983). Interdisciplinary education as a facet of health care policy: The impact of attitudinal research. *Journal of Allied Health, 12*(4), 280-286.

Bennis, W. (1989). *On becoming a leader.* New York: Addison-Wesley.

Buhler-Wilkerson, K. (1993). Bringing care to the people: Lillian Wald's legacy to public health nursing. *American Journal of Public Health, 83*(12), 1778-1786.

Campbell, B., & King, J. (1992). Public health service administration and academia: A joint venture. *Journal of Nursing Administration, 22*(12), 23-27.

Connelly, T. J. (1978). Basic organizational considerations for interdisciplinary education development in the health sciences. *Journal of Allied Health, 7*(4), 274-280.

Council on Education for Public Health. (1993). *Accreditation criteria: Graduate schools of public health.* Washington, DC: National Academy Press.

Covey, S. (1994). *First things first.* New York: Simon & Schuster.

Covey, S. (1989). *The seven habits of highly effective people.* New York: Simon & Schuster.

Dawkins, C. (1991). Collaboration as an organizational process. *Journal of Nursing Education, 30*(4), 189-191.

Department of Health and Human Services. (1995a). *Healthy United States 1994.* Washington, DC: Government Printing Office. (DHHS publication PHS 95-1232).

Department of Health and Human Services. (1995b). *Healthy people 2000 review 1994.* Hyattsville, MD: Government Printing Office. (DHHS publication PHS 95-1256-1).

Department of Health and Human Services. (1992). *The registered nurse population: Findings from the national Sample Survey of Registered Nurses.* Washington, DC: Government Printing Office.

Department of Health and Human Services. (1990). *Healthy people 2000.* Washington, DC: Government Printing Office. (DHHS publication PHS 91-50212).

DePree, M. (1992). *Leadership jazz.* New York: Dell.

Golden, J., & Moore, P. (1987). The Simmons-Harvard graduate program in public health nursing, 1953-1961: An experiment in nursing education. *Public Health Nursing, 4*(2), 123-127.

Hale, M. (1982). Interdisciplinary education fosters integration/collaboration. *Imprint, 29*(5), 16, 62, 64.

Hawken, P., & Hellestad, A. (1990). Promoting nursing's health care agenda through collaboration. *Nursing & Health Care, 11*(1), 16-19.

Holden-Lund, C., Tate, E., & Hyde-Robertson, B. (1991). Consortium model for master's education in nursing. *Nursing Education, 16*(5), 13-17.

Horton, J. A. (Ed.). (1995). *Women's health data book: A profile of women's health in the United States* (2nd ed.). New York: Elsevier.

Ibrahim, M. A., House, R. M., & Levine, R. H. (1995). Educating the public health work force for the 21st century. *Family and Community Health, 18*(3):17-25.

Iles, P., & Randhir, A. (1990). From organizational to interorganizational development in nursing practice: Improving the effectiveness of interdisciplinary teamwork and interagency collaboration. *Journal of Advanced Nursing, 15*, 50-58.

Institute of Medicine. (1995). *Nursing, health, and the environment: Strengthening the relationship to improve the public's health.* Washington, DC: National Academy Press.

Institute of Medicine. (1988). *The future of public health.* Washington, DC: National Academy Press.

Jeska, S. (1996). Leadership competencies for nurse executives. (Prepublication draft.)

Josten, L., Clarke, P. N., Ostwald, S., Stoskoph, C., & Shannon, M. D. (1995). Public health nursing education: Back to the future for public health sciences. *Family and Community Health, 18*(1), 36-48.

Kagan, S. L. (1991). *United we stand: Collaboration for child care and early education services.* New York: Teachers College Press.

Kang, R. (1995). Building community capacity for health promotion: A challenge for public health nurses. *Public Health Nursing, 12*(5), 312-318.

Kelly, K., Maas, M., & Maske, J. (1990). Adjunct executive appointment for faculty: An innovation in nursing collaboration. *Journal of Nursing Administration, 20*(10), 35-42.

Laatsch, L., Milson, L., & Zimmer, S. (1986). Use of interdisciplinary education to foster familiarization among health professionals. *Journal of Allied Health, 15*(1), 33-42.

Larson, E. L. (1995). New rules for the game: Interdisciplinary education for health professionals. *Nursing Outlook, 43*(4), 180-185.

Liang, A. P., Renard, P. G., Robinson, C., & Richards, T. B. (1993). Survey of leadership skills needed for state and territorial health officers, United States, 1988. *Public Health Reports, 108*(1), 116-120.

Loos, G. P., & McMillen, L. (1995). Public health practice in Hawaii: A model in forced transition. *The Link, 10*, 4-5.

Lough, M., Weinstein, L., & Abrams, R. (1986). Pre-school screening: An interdisciplinary training experience for nursing and dental students. *Journal of Nursing Education, 25*(4), 170-171.

Lynch, B. (1984). Cooperative learning in interdisciplinary education in allied health professions. *Journal of Allied Health, 13*(2), 83-93.

McGinnis, J. M., & Foege, W. H. (1993). Actual causes of death in the United States. *Journal of the American Medical Association, 270*, 2207-2212.

McQueen, S. (Spring, 1995). The growing need for private sector public health competencies. *The Link, 8*: 1, 8. Baltimore, MD: Council on Linkages Between Academia and Public Health Practice.

Misener, T. R., Alexander, J. W., Blaha, A. J., Clarke, P. N., Cover, C. M., Felton, G. M., Fuller, S. G., Herman, J., Rodes, M. M., & Sharp, H. F. III. (In press). National Delphi to determine leadership competencies for nursing leadership in public health image.

Pew Health Professions Commission. (1995). *Critical challenges: Revitalizing the health professions for the twenty-first century.* San Francisco: UCSF Center for the Health Professions.

Pew Health Professions Commission. (1993). *Health professions education for the future: Schools in service to the nation.* San Francisco: UCSF Center for the Health Professions.

Pew Health Professions Commission. (1991). *Healthy America: Practitioners for 2005.* Durham, NC: Duke University Medical Center.

Rosen, R. (1996). *Leading people: Transforming business from the inside out.* New York: Penguin.

Shamansky, S. (1995). A longer-than-usual editorial about population-based managed care. *Public Health Nursing, 12*(4), 211-212.

Sherman, J., & May, K. (1991). Evaluation of public health science in the graduate community health nursing curriculum. *Journal of Community Health Nursing, 8*(2), 113-119.

Spradley, B. W. (1990). *Community health nursing: Concepts and practice.* Glenview, IL: Scott, Foresman/Little Brown Higher Education.

Taylor, C. (1995). Rethinking nursing's basic competencies. *Journal of Nursing Care Quality, 9*(4), 1-13.

Tommet, P. A., York, J. L., Tomlinson, P. S., & Leonard, B. J. (1993). Graduate nursing education: Developmental disabilities and special health care needs. *Issues in Comprehensive Pediatric Nursing, 16*, 239-258.

Appendix 1
Course Descriptions, Objectives, and Topical Outlines

This listing is organized by course number.

Nursing and Public Health Nursing Courses

Nurs 5902: Nursing and the Politics of Health (3 cr)

Description
Analysis of social policy from health care formulation to appropriation and allocation of funding (federal, state, local); its impact on health status and on nursing education, research, and service.

Objectives
1. Examine the formation of public policy for health care and its impact on delivery
2. Define the role of political processes in altering appropriations and allocation of health care dollars defined by public policy
3. Analyze political infrastructure in appropriation and allocation of monies for health care (federal state, local), to determine relationships of politics to policy
4. Explain the impact of special interest groups on enactment of health legislation
5. Analyze nurses' changing perceptions of power politics in the political arena of policy formation and legislation and their ability to influence health care policy
6. Project strategies for nurses' participation in formulation of public policy, to development of legislation, through appropriation, to allocation of dollars for nursing education, research, service

Outline
1. Introduction and course overview, nurse involvement of policy and political action, history of U. S. health care policy
2. Emergence of an issue
3. Key issues in health care reform: Cost
4. Quality
5. Access, utilize, availability, and other policy issues influencing the public health
6. Theories of policy formation and analysis including the influence of economic theory
7. Federal, state, and local agencies: roles and responsibilities with development and

implementation of health policy. Legislative process for laws, rule-making, allocation of resources; international health

8. Influencing political process
9. Interest groups: Nursing's agenda for health care, medicine, hospitals, public health, rural, citizens, business, special interest groups
10. Student presentations on legislative issue

Nurs 5960: Advanced Public Health Nursing (3 cr.)

Description

This course provides an overview of factors related to public health nursing with special emphasis on development of conceptual frameworks for advanced practice. Focus on national health priorities and assessment strategies.

Objectives

1. Analyze factors that affect the health status of the public
2. Analyze the influence of historical and current trends on public health nursing
3. Consider interrelations between theoretical foundations of nursing care and meaning of public health
4. Synthesize theoretical foundations from nursing and public health into a unified conceptual framework for their own public health nursing practice
5. Demonstrate the use of principles of community assessment
6. Distinguish basic and advanced practice of public health nursing

Outline

1. Course overview and definition of terms
2. Factors affecting the health of the public, principles of critical thinking of scientific information and communication of that thinking, and overview of core functions of public health
3. Community assessment
4. U.S. health system including public health structure, financing, and managed care; center for population health
5. History of public health nursing, standards and competencies of practice, and advanced practice roles
6. Public health nursing, public policy, analysis, and advocacy; management information systems for public health
7. Conceptual framework and theory of advanced public health and community health nursing; ethical issues in advanced practice public health nursing
8. Application of conceptual framework to student's research and practice interest; state of the art of public health nursing research, including testing population and community models

Nurs 5963: Nursing Leadership for a Changing World (3 cr.)

Description

Theories of visioning, change, organizational culture, power, negotiation, team-building, forecasting, and personal growth are analyzed to strengthen leadership skills for the future. Focus includes evaluation of concepts of within a variety of nursing leadership roles (educator, manager, clinical specialist, consultant).

Objectives

1. Analyze current events and societal trends using a forecasting model to suggest the future opportunities and challenges facing nursing
2. Evaluate leadership knowledge applicability to nursing leadership roles in a changing world
3. Analyze the student's own leadership style as it relates to need for personal growth and how to most effectively use this leadership style within personal value structure to reach own vision of the role within nursing
4. Integrate theories on organizational culture, change, negotiation, power and team building as well as forecasting into a vision of nursing for the future and develop strategies to achieve that vision

Outline

1. Introduction to course. What is leadership? How does leadership related to various nursing roles? Overview of the history of leadership theories.
2. Different perspectives on leadership and followership
3. Facilitating communication: An essential key to effective leadership
4. Team building: An essential to effective leadership
5 The art of conflict resolution as a team leadership skill. Promoting creativity for self and others (Video: *Agreeing to Agree*)
6. System thinking and trend analysis
7. Creating a shared vision for nursing and the health care delivery system with consideration for the organizations mission, philosophy, and culture
8. The place of power, influence, and change in nursing leadership
9. Enhancing personal leadership effectiveness as a changing agent
10. Team presentations

Nurs 5964: Public Health Nursing Leadership Practicum (4 cr.)

Description

Focusing on the development of knowledge and skills of a specific leadership role within the field of public health nursing, this course facilitates the examination of leadership and role theory within the enactment of a leadership role. This 120-hour practicum experience involves a precepted public health nursing leadership placement, a journaled analysis of leadership experiences as they relate to leadership and role theory, and the completion of a project such as development of a new program initiative, planning for a change in the organization's activities, analyzing a leadership or policy issue, assisting with the development or management of a component of a budget, planning a quality assurance program, evaluating an activity, and developing an education offering.

Objectives

1. Develop skill in a leadership role within the field of public health nursing
2. Analyze the functions of that role and how enactment of that role contributes to the health status of the public
3. Distinguish the nursing leadership role from that of the other members of the public health team
4. Evaluate how the role fits with the student's conceptual framework for public health nursing

Outline

There is no course outline since this is a practicum course. The practicum is individually planned and arranged to build on the student's course work experience and course of study in accordance with the type of leadership role the student wishes to pursue (educator, manager, clinical specialist, consultant, planner). Examples of recent student practicum include: Minnesota Department of Health—examination of the role of a nurse health educator, Dakota County Health Department—examination of the role of a county public health nursing administrator.

Nurs 5965: Special Problems of Management of Community Based Nursing Services (3 cr.),

Description

Focuses on management problems common to community-based nonprofit or public nursing services. Emphasis is on developing skill in a management problem solving process to address such problems as working with a governing board, nonprofit budgeting, quality assurance, dealing with difficult people, outreach and missed appointments.

Objectives

1. Utilize a management problem solving process for analyzing complex management problems and developing a course of action to address those problems
2. Evaluate the level of scholarly rigor underlying the management knowledge used to guide the development of a course of actions
3. Analyze a range of management problems such a working with elected governing boards, non profit budgeting, supervision of the employee not on site, personnel safety, quality assurance, productivity, and reducing missed appointments
4. Analyze the roles of other disciplines in assisting nursing with the resolution of the selected management problems

Outline

1. Introduction to course. What is nursing management? What are some of the unique features of ambulatory care nursing management in the non-profit/public sector?
2. Decision making: The heart of effective management; contrasting nursing process with managerial problem-solving
3. The role and responsibility of governing boards and strategies for nurse managers to effectively work with them
4. Quality assurance
5. Supervision of employees
6. Staff turnover and management of performance problems
7. Outreach, tracking, and failed appointments
8. Patient classification and productivity
9. Budgeting for the community nurse manager

Nurs 8010: Structure and Discipline of Nursing (4 cr)

Description

The structure and the discipline of nursing will be examined. Purposes, characteristics, and kinds of structures will be explored, with particular emphases on theories, models, and conceptual frameworks.

Objectives

1. Identify attributes which distinguish a discipline
2. Identify the components and relationships that comprise the organized structure in nursing
3. Distinguish between different kinds of structure
4. Distinguish between internal and external criteria that may be utilized to evaluate a structure

Outline

1. Introduction and overview, discipline vs. profession of nursing, nursing as an art vs. nursing as a science, aims of nursing vs. aims of practice
2. Structure of nursing knowledge: metaparadigm, philosophies, conceptual models, nursing theories
3. Structural aspects of theories and concepts
4. Structural aspects, relational (causal and associational statements), existence statements, forms of theory
5. Criteria for analysis and evaluation of conceptual models and theories, internal and external standards, theory development and testing
6. Patterns of knowing and appropriate questions for different kinds of knowledge
7. Preparation for presentations of conceptual frameworks
8. Presentations of conceptual frameworks

Nurs 8011: Moral and Ethical Positions in Nursing (3 cr.)

Description

This course provides a study of the influence of moral and ethical positions on behavior and decision-making in nursing. Emphasis is on the basis for position taking, moral and ethical theory, rights and responsibilities, and conflict. This course helps the student identify action that reflects a moral or ethical position in various nursing contexts, understand how moral and ethical beliefs influence behavior, relate selected moral and ethical theories to position-taking, specify a personal position on moral and ethical issues in nursing, and identify the consequences of taking a position.

Objectives

1. Identify actions that reflect a moral or ethical position in various contexts of nursing
2. Describe how moral and ethical beliefs influence behavior
3. Relate selected moral and ethical theory to position taking
4. Specify own position on moral and ethical issues in nursing
5. Describe basis for own position
6. Identify the consequence of taking a position

Outline

1. Introduction
   a. Overview of course
   b. Moral and ethical issues of society, in nursing, and encountered by student in nursing.
2. Theoretical Frameworks
   a. Philosophical orientations
      - Deontological
      - Teleological
   b. Psychological orientations
      - Descriptive psychology
      - Developmental theory
   c. Research orientations
      - Moral judgment
      - Moral behavior
   d. Synthesis of theoretical frameworks
3. Resolution of moral and ethical issues in nursing
   a. Analysis of major issues
      - Defining quality of life
      - Determining right to decide
      - Distributing health care resources
      - Delegating and accepting responsibility
   b. Implementation of theoretical framework
   c. Taking a position
   d. Consequences of taking a position

Nurs 8014: Research in Nursing (3 cr)

Description

Research in Nursing includes an exploration of the research process and the methodologies appropriate to nursing. The analysis and critique of research studies and reports is a primary method for developing the knowledge and skills relevant to application and implementation of research studies.

Objectives

1. Describe the research process
2. Distinguish the following elements of research study: problem-statement, problem-background, purpose, hypothesis, assumptions, findings, interpretations, and conclusions
3. Describe the interrelationships among the elements of a research study
4. Compare methodology in a given study with alternative approaches for the problem indicating respective effects on findings and conclusions
5. Distinguish among kinds of relationship that exist between two variables
6. Interpret the level of validity and reliability achieved by a tool
7. Interpret the meaning of statistics in a study that is critiqued

8. Evaluate a research report according to identified internal and external criteria
9. Recognize the complexity of the research process

Outline

1. Introduction to the research process, research utilization
2. Computer literature searches, theoretical frameworks, sampling
3. Sampling, principles of design, non-experimental research
4. Designs—experiments and quasi-experiments
5. Instrumentation
6. Oral review, qualitative research
7. Instrumentation and analysis
8. Instrumentation and analysis
9. Qualitative analysis, computer programs
10. Analysis of data, ethical issues with research on human subjects

Nurs 8040/PubH 5733: Public Health Interventions across the Lifespan (4 cr.)

Description

This course focuses on the synthesis of knowledge of public health, nursing, and development as a foundation for designing multi-level intervention strategies. Health behavior models provide the framework for developing interventions that address priority public health problems across the lifespan. This course teaches students to compare and contrast health priorities for each developmental stage across the lifespan from a community perspective and to analyze public health interventions for specific age cohorts, considering salient developmental, socioeconomic and cultural characteristics. As part of this course each student develops an intervention model for a specific age group that incorporates public health priorities for the nation, an understanding of health behavior change theory, and the unique developmental needs of specified age group.

Objectives

1. Integrate knowledge of public health, nursing, and development as a foundation for assessment of and interventions with family and community systems
2. Compare and contrast health priorities for each developmental stage across the lifespan from a community perspective
3. Utilize health behavior change models to analyze the effectiveness of intervention strategies that address priority public health problems for specific age groups
4. Interpret relationships between poverty and public health problems across the lifespan as a basis for adapting intervention approaches with specific populations
5. Analyze public health interventions for specific age cohorts, considering salient developmental, socio-economic, and cultural characteristics
6. Utilize current and salient health and social science research as rationale for intervention recommendations
7. Develop an intervention model for a specific age group that incorporates public health priorities for the nation, an understanding of health behavior change theory, and unique developmental needs of a specified age group.

Outline

Unit I: Health Behavior within a Developmental Context

1. Topics: Overview of course, multiplicity of PH perspectives and interventions, health belief model. Health problems: Content is illustrated by discussion of communicable disease such as TB and chronic diseases.
2. Topics: Child and adolescent development, sexual behavior outcomes, clustering of risk behaviors, and interventions that promote resilience. Health problems: Includes discussion of teenage pregnancy, HIV, STDs, alcohol, drug, and tobacco abuse, homelessness.
3. Topics: Social Perspective on risk reduction, frail elderly at risk, and policy implications/interventions. Health problems: Includes discussion of risk factors for heart disease, Ca hypertension, stroke and diabetes, falls and dependence in adults and elderly. Includes discussion of dementia and aging policy.

Unit II: Health and Poverty

1. Topics: Demography of poverty, and color and poverty. Health problems: Includes the effect of poverty on immunization rates, prenatal care and low-birth-weight infants, alcohol, drug and tobacco abuse, domestic abuse, risk factors for Ca hypertension, stroke, CVD, suicide, homicide, TB, etc.
2. Topics: Psychosocial outcomes of poverty, physical outcomes of poverty, and interventions for the economically at risk. Health problems: Includes the effect of poverty on immunization rates, prenatal care and low-birth-weight infants, alcohol, drug and tobacco abuse, domestic abuse, risk factors for Ca hypertension, stroke, CVD, suicide, homicide, TB, etc.

Unit III: Health and Social Issues

1. Topics: Violence, domestic abuse, and multi-systems interventions. Health problems: Includes specific information on interventions designed to reduce the incidence of violence, especially child abuse, partner abuse and elder abuse.
2. Topics: Substance abuse, and continuum of comprehensive interventions; Health problems: Includes specific information on interventions designed to reduce alcohol abuse, illicit and prescription drug abuse, use of tobacco.

Unit IV: Health and Chronic Illness

1. Topics: Developmental disabilities and community mental health. Health problems: Discusses the role of public nurses in dealing with developmentally disabled children and adults and mental health problems such as depression and chronic mental illness.
2. Topics: Protection for medically fragile, and interventions that promote safety. Health problems: Includes specific information on prevention and treatment of injuries related to fires, falls, motor vehicle accidents, and other unintentional causes (i.e., drowning, poisonings). Also includes discussion of caregivers and interventions designed to reduce their depression and stress.
3. Topics: Synthesis of successful interventions across the lifespan.

Nurs 8042: Community-Based Public Health Nursing Interventions (3 cr)

Description

Systematic inquiry into community-based intervention models that integrate knowledge, clinical research, and public health knowledge. Emphasis on community organization and social change models and the development of community-based nursing intervention models for practice.

Objectives

1. Analyze community organization, social change, public health, and nursing models for effectiveness in addressing community health problems
2. Evaluate research on community-based interventions and the application to specific communities and populations
3. Integrate social science, biological, behavioral, and other related research that support community-based nursing interventions
4. Analyze community intervention strategies that facilitate social change and promote health in communities
5. Incorporate cultural diversity concepts and practices related to community-based interventions
6. Develop a community-based intervention model for a specific public health nursing population in a community that incorporated the community organization model, principles of social change, relevant research, practice-based applications, and appropriate evaluation

Outline

1. Introduction, difference in population-focused, community-oriented, and community-based nursing, introduction to community development
2. Evaluation
3. Community development continued
4. Community oriented primary care, public health law, parish nursing
5. Media, outreach/marketing
6. Cultural diversity, school and jail nursing work site, hospitals and home care, alternative sites for health promotion (workplace, bus, stores, etc.)
7. Managed care policies, incentives for population focus, standards of care
8. Community building skills: written communication, telephone, self-help groups, peer counseling
9. Case management, reminder system, and compliance

Nurs 8050: Problems in Nursing (4 cr)

Description

During this course, the student completes the research process begun in Nurs 8014, Research in Nursing, and produces the final report of the Plan B project. The teaching-learning methods include discussing aspects of the process with other students and the instructor, working individually on the project, doing peer reviews of drafts of the research reports of two student colleagues, and meeting one-to-one with the instructor. Students work in a self-paced manner to complete the series of steps necessary to finish the Plan B Project and written report. However, deadlines have been set to ensure that all students complete the work during the quarter.

Objectives

The objectives of this course and of the Plan B Project are the same.

Outline

1. Make revisions to proposal based on Nurs 8014 critique
2. Update literature review and incorporate in revision of proposal/research report

3. Get two peers and instructor to review revised document; do a peer review of revised documents prepared by two peers
4. Complete the SPSS-PC tutorial
5. Decide what variables to use to describe subjects (e. g., ages of mothers); discuss with group and instructor and write specific variables
6. Outline data analysis section in detail; prepare the tables (empty) to be included in the data analysis section
7. Get two peers and instructor to review outline of data analysis section and tables; do a two-peer review of the data analysis section and tables
8. Write a detailed list of data needed from the mainframe database for data analysis
9. Analyze data
10. Discuss results with instructor
11. Write results section
12. Get two peers and instructor to review results section; do a peer review of the results section prepared by two peers
13. Revise results section
14. Outline and write final chapter (discussion, conclusions, and recommendations).
15. Get two peers and instructor to review final chapter; review final chapter prepared by two peers
16. Make final revisions in earlier chapters and final chapter. Turn in near final version of Plan B. Present results to rest of group
17. Schedule final orals (if student is close enough to the end of program to do so)

Nurs 8060: Public Health Nursing Intervention Practicum (4 cr.)

Description

This course is a practicum providing students with an opportunity to explore advanced practice roles within the context of community-based health care delivery systems. This course will assist students in synthesizing knowledge from nursing, public health, and other disciplines to develop interventions that improve the health of specific population subgroups and in analyzing systems for the delivery of public health care to determine the ways that nurses in advanced practice roles can maximize the health of populations.

Objectives

1. Utilize public health and nursing conceptual frameworks to guide advanced practice
2. Synthesize knowledge from nursing, public health, and other disciplines to develop interventions that improve the health of specific population subgroups
3. Analyze systems for the delivery of public health care to determine the ways that nurses in advanced practice roles can maximize the health of populations
4. Integrate the education, engineering and enforcement functions of public health nurses with those of other multidisciplinary team members to address specific health problems of population group.

Outline

Since this is a practicum there is no outline. This practicum is individually arranged by the faculty with the preceptor to focus on the student's goals. Examples of practicum

experiences include Minnesota Department of Health, Breast and Cervical Cancer Prevention, Bloomington Health Department, Prevention of Family Violence Project, and Hennepin County Homeless Shelter, Health Promotion/Mental Health Project.

Public Health Courses

PubH 5025: Community Health Education Seminar (1 cr.)

Description
The purpose of this course is to introduce first-year community health education students to the field of public health and to community health education as a profession. The course also introduces them to recent graduates working in the field, some of the faculty in the program, and provides more information about options during their graduate program.

Outline
1. Course introduction, introduction to public health
2. What is community health education?
3. Advice form recent graduates of CHE program
4. Management as a component of CHE training
5. Boynton Health Service as a public health agency
6. Orientation revisited
7. Internships: Why and how
8. Ph.D. as an option
9. Master's project: Advice from recent students
10. Social with faculty

PubH 5026: Psychosocial Approaches to Health Behavior Change (3 cr.)

Description
This course is an introduction to the foundations of community health education, with emphasis on individual behavior change, designed for first-year students in the Community Health Education major in the School of Public Health.

Objectives
1. Introduce students to the field of health education and public health approaches to behavior change
2. Introduce students to the application of community health education as a public health discipline
3. Enable students to apply theoretical models to health education program development and evaluation
4. Provide students with a background and working knowledge of a variety of psychosocial models of health behavior change

PubH 5027: Community and Environmental Approaches to Health Behavior Change (3 cr.)

Description
Socio-environmental factors influencing health-related behaviors. Roles of groups, institutions and social structures in encouraging healthy or unhealthy behavior. In-

terventions designed to improve health behavior through changes in the social environment; economic, social and political structures and practices creating barriers to effective interventions.

Objectives

1. The dominant role social environment has in affecting risks for and prevalence of many contemporary health problems
2. Major structural characteristics of society that influence health behavior and health status.
3. Patterns of diffusion of new behavior patterns through communities and societies
4. A broad range of approaches for achieving planned social change to enhance health
5. Ways in which social, political and economic power differentials create barriers to effective health behavior interventions
6. Application of theories, methods, and lessons from past experience about the role of social environment in health to contemporary public health problems

PubH 5028: Organizational and Institutional Settings of Community Health Education (3 cr.)

Description

Health education efforts are not conceived, planned, implemented, and evaluated in a vacuum. In fact, organizational and institutional factors strongly influence how community health education is practiced. A wide variety of organizations (including federal government organizations, state and local health departments, nonprofit organizations, and health care organizations) support or engage in health education efforts. The practice of health education is shaped by the missions, cultures, resources, structure, and politics of these organizations. Similarly, the way the profession of health education is institutionalized with respect to professional training, credentialing, and professional associations has an important influence on health education practice. This course is intended to provide an overview of the types of organizations in which health education is practiced and of the organization of the profession, and to explore how these organizational and institutional factors shape practice.

Objectives

1. Demonstrate an understanding of the wide variety of organizations in which health education is practiced, and of the organization of the profession of health education
2. Discuss how organizational and institutional factors affect the practice of health education

PubH 5035: Applied Research Methods (4 cr.)

Description

The purpose of this course is to teach basic research skills and concepts needed to plan, conduct, and analyze data from a research project. Skills including literature searching, questionnaire development, scale construction, item analysis, data coding, entry and analysis, and report writing will be taught. Students will develop their questionnaire and conduct data analysis using a computer software package.

Objectives

1. Search the literature and identify existing project-relevant research
2. Write a proposal for a small research project, including developing a project budget
3. Select appropriate items to construct a research questionnaire and to develop scales
4. Understand the concepts of reliability, validity, response biases, and the pros and cons of a variety of survey administration techniques
5. Conduct data coding, entry, and descriptive statistics using a computer software package
6. Complete a human subjects application and develop a consent form
7. Write a research report summarizing the study purpose, design and methods, and results

PubH 5096: CHE Master's Research Project (4 cr.)

Description

For students who are involved in original research or secondary analysis of data sets related to health education.

PubH 5154: Practicum in Environmental & Occupational Health (4 cr.)

Description

The EH field experience provides students with a means of gaining additional insight into programs, personnel management, governmental relations, public relations, legislative support and, particularly, knowledge of special investigations conducted by these organizations. Participation in the activities of EH programs external to the university adds a dimension of experience to the curriculum that enriches the student's training and may be beneficial in seeking employment.

Objectives

1. Provide students with practical industrial hygiene experience in a "real world" setting
2. Enable students to see how ideas and concepts learned in the classroom are applied
3. Bring students into contact in a work environment with professional industrial hygienists and with other occupational and safety professionals

Outline

Topics in the practicum experience may cover any part of the whole range of industrial hygiene practice. The practicum may be carried out in corporate, consulting, or agency settings by arrangement between the student, his/her academic advisor and the outside body in question. For the latter, an outside advisor is assigned to ensure that the goals of the practicum are met. A minimum of 135 hours of such experience is required, although most students substantially exceed this. It is important to note that the practicum credits are not included in the 70 course credits required for successful completion of the program.

PubH 5155/Nurs 5883: Issues in Environmental and Occupational Health (2 cr.)

Description

This course is designed to acquaint students with the scope and magnitude of environmental health concerns, including macro-environments, micro-environments, and consumer products. It emphasizes the interrelationships between the various environmental elements, and how these interrelationships must be recognized in designing environmental controls. This course familiarizes the student with the concepts utilized in environmental intervention strategies to protect human health, and teaches the student to differentiate between "environmental ecological" and "environmental health" issues.

Objectives

1. Relate the sources of contaminants, how they reach people, and the effect that they have on people
2. Identify appropriate intervention strategies for various environmental health problems
3. Discuss the social, political and economic issues underlying the programs designed to address environmental health

Outline

1. Air pollution control
2. Food protection
3. Hazardous and solid waste management
4. Housing conservation and rehabilitation
5. Water pollution control
6. Waste water treatment
7. Occupational health and safety
8. Pest control
9. Noise pollution control
10. Environmental safety
11. Radiation control
12. Energy management
13. Institutional sanitation
14. Consumer product safety

PubH 5156: Environmental Health Survey

Description

This is an introductory survey course in environmental health required for all graduate students in the environmental health major. Graduate students majoring in this field are expected to become familiar with the broad scope of environmental health issues and problems and to develop both a philosophical base and specific technical knowledge sufficient to function as a true professional in the field.

Objectives

1. Differentiate the relative magnitude of the carious environmental health problems discussed in class and prioritize these problems on the basis of human health effects

2. Relate the sources of contaminates, how they reach people, and the effect they have on people
3. Identify appropriate environmental intervention strategies for the various environmental health problems discussed in class
4. Identify regulatory approaches, educational and political strategies pertinent to the issues and how these interact with technical environmental interventions in the solution to given problems
5. Recognize the biases and oversimplifications which may be identifies in the press and other mass media relative to environmental health issues

Outline

1. Water
2. Waste water
3. Air pollution
4. Solid waste
5. Ionizing radiation
6. Occupational health
7. Residential environmental problems
8. Institutional environmental problems
9. Consumer products
10. Food-borne disease
11. Vector-borne disease
12. Environmental policy
13. Controversies

PubH 5158: Health Risk Evaluation (3 cr.)

Description

General principles of health risk assessment and management; environmental pollutants; public domain and workplace; legislation and regulation.

Objectives

1. Acquaint students with current approaches to health risk evaluation
2. Create an appreciation for the various segments, complexities, and limitations of risk analysis

Outline

1. Measures of risk
2. Analysis from different professional perspectives
3. Models and algorithms
4. Probability of causation, benefit/risk, cost/benefit
5. Socio-political aspects of risk analysis
6. Risk communication
7. Statistical aspects

PubH 5159: Seminar in Environmental Health (2 cr.)

Objectives

1. Provide students with experience preparing material for presentation and standing before a peer group to present that material as a 20-minute paper in a seminar- or conference-like setting
2. Provide important experience and training in communication of ideas in the occupational and environmental health area

Outline

Topics covered in the seminar experience may be drawn from any area of environmental and occupational health.

PubH 5166: Employee Health Programs (3 cr)

Description

This course is designed to promote students' understanding of health care management in American business and industry. Trends in health care cost management will be examined for implications for planning and financing of health care for employees and their families. The role and functions of consultants and managers withing industry, insurance, and health care will be analyzed relative to program management. Students will evaluate a health care cost management program in industry.

Objectives

1. Discuss health care cost issues and the implications for the public
2. Identify trends in health benefits for employees and their families
3. Discuss issues in data analysis and strategies for identification of health expenditure trends and the implications for program planning
4. Discuss principles and programmatic strategies for employers to wisely purchase health care management costs
5. Demonstrate the ability to evaluate a health care cost management strategy in industry or insurance
6. Identify the role and functions of occupational health, safety, and benefit specialists in relation to the management of health programs
7. Discuss integrated models of occupational health, safety, and benefit programs

Outline

1. Employee health benefits and employer management strategies; role of involved parties
2. Health care reform in Minnesota
3. Workers compensation financing and case management
4. Workers compensation and managed care
5. Disability management.
6. Evaluation methods
7. Violence in the workplace
8. Health promotion
9. Mental health benefits
10. ADA and exams

11. Work and family initiatives
12. OSHA compliance

PubH 5167: Theory and Practice of Occupational Health (3 cr)

Description

Introduction to major concepts and issues in occupational health and safety. Students identify a conceptual framework for working with aggregate populations of workers. The application of public health principles and decision-making process will be discussed in relation to prevention of injury and disease, health promotion of adults, and protection of worker populations. This course relies on the synthesis of knowledge in the behavioral sciences, industrial hygiene, nursing theory, toxicology, and epidemiology while applying these within a program development and management framework.

Objectives

1. Recognize the interrelatedness of public health, role of government, labor movement, and the goals of occupational health and safety
2. Demonstrate a base of knowledge in the recognition of health and safety hazards in the workplace
3. Identify a conceptual framework for the practice of occupational health
4. Relate health promotion/prevention/protection concepts to the occupational health and safety program
5. Relate cost containment concepts to the occupational health and safety program
6. Discuss the roles and functions of the occupational health manager in the application of the conceptual framework
7. Apply theories and concepts of occupational health and safety to the development and management of occupational health programs

PubH 5168: Theory and Practice of Occupational Health: Field Experience (1 cr)

Description

This is an arranged field experience, seminar course. its purpose is to acquaint students with the application of occupational health and safety concepts within a conceptual framework of occupational health. This course builds on theories explored in PubH 5167.

Objectives

1. Recognize the interrelatedness of public health, roles of management and labor, and the goals of occupational health and safety
2. Compare and contrast models of occupational health nursing service
3. Apply a public health conceptual framework to the practice of occupational health
4. Discuss the roles and functions of occupational health nurses in the application of the conceptual framework

Outline

1. Theory
   a. Functions
      • Explain observed phenomena

- Provide a basis for verification
- Stimulate new discoveries
- Facilitate communication

2. Models
   a. Functions
      - Clarify theory
      - Focus on structure
      - Symbolic representation of ideas
   b. Components
      - A description of the person who receives care
      - State of the goal or purpose of care
   c. Delineation of intervention or activities
3. Conceptual model for occupational health clinical specialist
   a. Scope of practice
      - Where it's practical
      - On whose behalf
      - With what outcome
   b. Occupational health and safety objectives
      - Increased participation in self care activities
      - Increased health knowledge
      - Increased awareness and knowledge of safety hazards
   c. Occupational health and safety programs
      - Environmental monitoring
      - Health surveillance
      - Primary care
      - Health and safety education
      - Research
   d. Health determinants of the individual
      - Internal stressors
      - External stressors
      - Coping strategies
   e. Occupational health clinical specialist role
      - Form
      - Function
4. Conceptual model for the occupational health manager
   a. Scope of practice
   b. Occupational health and safety objectives
   c. Occupational health and safety programs
   d. Health determinants based on the specific work site
   e. Occupational health and safety manager's role

PubH 5194: Injury Prevention in the Workplace, Community, and Home (3 cr.)

Description
Analyses of major injury problems affecting the public in the workplace, community, and home using the epidemiologic model and conceptual framework; emphasis on strategies/program development for prevention and control.

Objectives
1. Identify major injury problems in the workplace, community, and home
2. Analyze variables related to injury problems using the epidemiological model
3. Develop strategies for prevention and control of selected injury problems, utilizing a comprehensive framework

Outline
1. Overview and background
2. Injury epidemiology
3. Surveillance
4. Politics
5. Ergonomics
6. Specific topics

PubH 5211: Survey of Industrial Hygiene (3 cr)

Description
Survey of the field of industrial hygiene for non-practitioners. Over view of the science and art of recognizing, evaluating, and controlling health hazards in the workplace. This course is directed at safety and health professionals and other interested in a basic understanding of industrial hygiene without the detail required by a practicing industrial hygienist.

Objectives
1. The scope of occupational health as an integral part of public health
2. Factors in the occupational environment which can impact the health or a working population
3. The process of quantifying the human exposure to toxic agents
4. The control measures that can be applied to the work environment to reduce or eliminate exposure to toxic agents

PubH 5218: Field Problems in Occupational Health (3 cr)

Description
Guided evaluation of potential occupational health problems. Recommendations and design criteria for correction if indicated.

Objectives
1. Develop an understanding of the roles and functions of occupational health and safety professionals as members of an interdisciplinary team
2. Identify a team approach to a planned assessment and evaluation of specific worker population and workplace
3. Relate working conditions to the health and safety of the workers
4. Discuss concepts of hazard recognition, evaluation, and control

Outline

1. A team approach to health and safety
2. Case studies: Walk through analysis
3. Agricultural orientation and field visit
4. Plant tours

PubH 5250: Environmental & Occupational Health Master's Project (4 cr)

Description

To provide students with investigative research experience. Topics covered in the project may be drawn from nay area of industrial hygiene, and are chosen by each student with guidance from his/her advisor.

PubH 5267: Industrial and Occupational Toxicology (3 cr)

Description

This course provides both graduate students and practicing occupational health and safety professionals with a basic understanding of the science and principles of toxicology, an overview of the potential adverse effects produced by various classes of occupational chemicals on selected organs/tissues, an overview of sources of toxicology data/information and its use in the occupational setting, and an overview of regulatory toxicology as it applies to chemicals in the occupational setting.

Objectives

1. The toxicological concepts of absorption, distribution, metabolism, and excretion of chemicals and the does-response relationship
2. The structure and function of the major organs/organ systems of the body, such as the liver, kidneys, lungs, hematopoietic system, and nervous system, and specific and general adverse effects produced in them by occupational chemicals
3. The general principles of reproductive and developmental toxicology, genetic toxicology, and carcinogenesis
4. Where and how to access toxicological data on occupational chemicals
5. The uses of toxicological data in occupational hazard assessment and hazard assessment and hazard communication
6. The major U.S. laws and regulations pertaining to occupational chemicals and how they specifically relate to occupational toxicology
7. The major federal and other agencies/organizations that evaluate toxicological data on chemicals for use in deriving occupational exposure limits and classification of their potential adverse effects.

PubH 5281: Introduction to Occupational Medicine (3 cr.)

Description

This course will review the major clinical, administrative, and preventive issues in occupational medicine. Disease mechanisms, descriptive epidemiology, and public health aspects of the common occupational health problems will be covered.

Objectives

1. Identify the major components of the work-worker interaction that affect worker health

2. Become familiar with the usual techniques for analyzing work and work exposures and for assessing worker health and fitness
3. Review selected clinical problems in occupational medicine
4. Understand the roles of various professionals and agencies in the promotion of worker health

Outline

1. Introduction
2. Evaluating the work
3. Evaluating the environment
4. Evaluating the worker
5. Evaluating work injury and illness
6. Evaluating work disability
7. OSHA standards
8. Health care workers
9. Occupational toxicology
10. Air quality

PubH 5330: Epidemiology (4 cr.)

Description

This course, which involves both lecture and laboratory instruction, provides students with an introductory exposure to seven aspects of epidemiology—orientation and scope, measures of disease frequency, descriptive epidemiology, analytic study designs, measures of effect, data interpretation, and screening. The course includes special lectures on the epidemiology of infectious diseases, diabetes, cancer, and nutrition.

Objectives

1. Define epidemiology
2. Describe the circumstances in which a primary prevention program would be used instead of a secondary prevention program (and vice versa) in the control of disease
3. Discuss the general principles and problems of mass screening for chronic diseases and their rich factors, and calculate sensitivity, specificity, and the predictive value of negative and positive test
4. Describe and apply to specific diseases the epidemiologic model (i.e., agent-person-place-time-model) and the "causal chain" model
5. Describe the criteria useful in discriminating causal from non-causal associations
6. Describe the meaning and relevance of the following terms to epidemiology: reliability, validity, representativeness, and generalizability
7. Describe the difference between the descriptive and analytic approaches to epidemiology and describe the application of the "steps in the analytic approach" to associations between exposures and diseases (or other health-relevant outcomes)
8. Discuss the advantages, disadvantages, and proper application of the various research designs used in epidemiology; compare the quality and type of information available from these different designs

9. Calculate basic measures of disease occurrence such as incidence, prevalence, case-fatality, and mortality rates, and describe the interrelationships between these measures
10. Calculate and interpret the meaning of a relative risk, odds risk, rate difference, and the population attributable risk

Outline

1. Introduction/overview; orientation and scope of epidemiology; foundations
    - Concept of causality
    - Sources of epidemiologic data
2. Measures of disease
    - Rates, ratios, proportions
    - Rate adjustment (direct vs. indirect)
    - Selected indices of health
3. Descriptive epidemiology
4. Study designs in epidemiology
    - Overview
    - Ecologic, cross-sectional studies
    - Case control
    - Cohort
    - Clinical trials
    - Community trials
5. Measures of effect
    - Attributable risk
    - Relative risk, odds ratio
    - Regressional and correlation analysis
6. Data interpretation issues
    - Bias in epidemiologic research (summary)
    - Confounding
    - Control of confounding

Outline Laboratory

1. Snow on cholera
2. Rates and rate adjustment
3. Measurement and measurement error
4. Case-control studies
5. Cohort studies
6. Intervention studies in epidemiology
7. Investigation of outbreaks
8. Screening for disease
    - Principles
    - Evaluation

9. Infectious disease models
    - Chain of infection
    - Mechanisms of transmission
    - Attack rates
10. Selected topics in epidemiology
    - Epidemiology of genetic diseases
    - Epidemiology of cancer
    - Infectious disease epidemiology

PubH 5335: Epidemiology and Control of Infectious Diseases (3 cr.)

Description
Principles and methods of infectious disease epidemiology. Strategies for disease control and prevention, including immunization. Relevance of modes of transmission of specific agents for disease spread and prevention. Public health consequences of infectious diseases at local, national, and international level.

Outline
1. Principles of ID epidemiology and surveillance
2. Outbreak investigation
3. Tuberculosis
4. Vector-borne diseases
5. Food-borne illnesses
6. Zoonoses
7. STDs
8. Dengue and other emerging viruses
9. Control of HIV/STDs
10. Bloodbanking
11. Immunization
12. Antibiotic resistance
13. Unlinked HIV testing of newborns
14. Streptococcal disease
15. Universal Hepatitis B immunization
16. Viral causes of cancer
17. Emerging infectious diseases
18. Historical perspective: control of polio

PubH 5340: Epidemiology II: Strategies and Methods (4 cr.)

Description
Measures of disease occurrence, and strategies and design principles of etiologic and evaluative studies. Measurement problems, interactions, sensitivity and precision, validity, and the need for data specification and control of variables.

Objectives
1. Design basic epidemiologic studies

2. Analyze basic epidemiologic data
3. Critically review epidemiologic papers

PubH 5341: Interpretation of Data from Epidemiologic Research (4 cr.)

This course provides instruction and hands-on experience in the analysis and interpretation of data from epidemiologic studies.

Objectives

1. Describe the research questions that can be addressed by case control and cohort studies
2. Describe the rationale underlying the major techniques used to analyze data from case control and cohort studies
3. Explain the conditions under which these methods are appropriate and their relative advantages and disadvantages
4. Explain how interactions, confounders, and nonlinear relationships among variables are addressed with these analysis alternatives
5. Use SAS to analyze data from epidemiologic studies employing these designs and analysis methods
6. Use the results from these analyses to help interpret the data from such studies

PubH 5345: Epidemiologic Methods: Data Collection (3 cr.)

Description

This course will cover methods and techniques for collecting and managing epidemiologic research data, including practical aspects of sampling; response rates and response bias; forms design; selection and training of interviewers; data preparation, entry and cleaning; data management; and ethical issues in research. The course will emphasize data collection from individual respondents and include methods for utilizing clinic and vital record in studies.

PubH 5379: Seminar in Epidemiology Plan B Presentations (2 cr.)

Objectives

The principal objective of the seminar on Plan B presentations is to provide a forum for students to present their Plan B projects, and to give and receive feedback. It is anticipated that all projects are either underway or near completion.

PubH 5383: Pathobiology of Human Diseases (4 cr.)

Description

Basic cell biology and pathology of human diseases.

Outline

1. Natural history of diseases: Definitions and causes
2. Normal and abnormal: Cells, tissues, and organs
3. Genetic disorders of disease
4. Immunology
5. Diabetes
6. Atherosclerosis

7. Classification and dietary therapy of lipid disorders
8. Hematology
9. Myocardial infarction and coronary artery disease
10. Cardiovascular disease, congestive health failure, and hypertension
11. Obstructive lung disorders
12. Biology of AIDS
13. Infectious diseases
14. The cellular basis for cancer
15. Mechanisms of cancer induction and molecular biology of tumors
16. Diagnosis, staging, and cancer markers
17. Obesity and disease
18. Gastrointestinal disorders

PubH 5384: Human Physiology (4 cr.)

Description
Basic human physiologic functions and mechanisms related to coronary heart disease, stroke, diabetes, exercise tolerance, and aging. Progressing from cellular function to organ function to coordinated body function. Consistency of the internal environment—the need for homeostasis; adaptation to change, including chronic disease; energy use; integrated control systems; and age and physiologic function.

Outline
1. Tissues, organs, and control mechanisms
2. Chemical composition of the body
3. Cell structure
4. Cellular enzymes
5. Cellular respiration/ATP reduction
6. Cellular respiration/ATP production
7. Membrane Transport
8. Diffusion, osmosis, molality, osmolality, and tonicity
9. Regulations and effects of hormones
10. The nervous system
11. The autonomic nervous system
12. Genetics
13. Physiology of stroke
14. Skeletal muscle structure and function
15. Skeletal muscle voluntary and involuntary control
16. Skeletal muscle energy utilization
17. Elements and functions of CNS and ANS hormone action, dynamics of muscle contraction
18. Coagulation and bloodclotting
19. Heart and circulation
20. Cardiac output and blood flow

21. The heart, the circulatory system and the electrocardiogram
22. Respiratory physiology
23. Hemoglobin and oxygen transport
24. Effects of exercise, smoking, altitude and respiratory function
25. Renal physiology
26. Renal physiology and blood pressure
27. Cardio-respiratory response to rest, exercise and recovery
28. The digestive system
29. The digestive system liver, gallbladder, and pancreas
30. The digestive system digestion, absorption of carbohydrates, lipids, and proteins
31. The function of the GI tract, the function of the nephron
32. Regulation of metabolism
33. Sports physiology
34. Immunology

PubH 5387: Cancer Epidemiology (3 cr.)

Description
Epidemiologic aspects of cancer, including theories of carcinogens, incidence, site specific risk factors, and issues of cancer control and prevention.

Objectives
1. Knowledge of the general principles of the molecular and cellular basis of carcinogenesis
2. Identification of various aspects of pathologic and morphologic classification of malignancies and the implications for epidemiologic research
3. Description of international patterns in cancer incidence and mortality
4. Knowledge of the public health implications of cancer
5. Critical evaluation of different methodological approaches used to study etiologic hypotheses in cancer research
6. Knowledge of the major known and hypothesized associations between cancer and nutrition, hormones, reproduction, occupation, tobacco, alcohol, chemical exposures and radiation
7. Identification of presently known associations and hypotheses relating to the immunology and genetics of cancer
8. Knowledge of epidemiologic characteristics and risk factors for cancers of the lung, breast, GI tract, pancreas, liver, bladder, skin, brain, endometrium, ovary, prostate, leukemias, and lymphomas, as well as cancer in children and young adults
9. Knowledge of the implementation of cancer surveillance and cancer screening, and their relation to cancer prevention

PubH 5391: Introduction to Behavioral Epidemiology (3 cr.)

Description
This course examines both theoretical and methodological issues in epidemiological studies of risk-related behaviors. Special attention is given to the measurement of

risk-related behaviors, behavioral and environmental theories pertinent to disease prevention, and individual and community-based strategies designed to change risk-related behaviors.

Objectives

1. Acquire an understanding of risk-related behaviors and their contribution to disease
2. Learn tools for measuring risk-related behaviors and other types of variables
3. Obtain a working knowledge of theories pertinent to health promotion and disease prevention
4. Learn individual and community-based strategies for changing risk-related behaviors
5. Develop skills in analyzing and critiquing epidemiological studies of risk-related behaviors

PubH 5414: Biostatistical Methods I (4 cr)

Description

Basic quantitative methods for public health students including descriptive statistics, concepts of probability and random sampling, fundamental inferential procedures including confidence estimations, *t* and chi-square tests, correlation, and regression analyses.

Objectives

1. Apply formulas to public health studies: cohort and case—control, experimental, and observational
2. Understand methods, concepts, and philosophy

Outline

1. Proportions, rates, and ratios
2. Summarization of continuous measurements
3. Probability and probability models, confidence estimation
4. Introduction to hypothesis testing, simple statistical tests
5. Regression and correlations
6. Life table methods

PubH 5415: Biostatistics (3 cr)

Description

Correlation, regression, analyzing variance, and non-parametric tests. Using computer packages for analyzing data.

Objectives

1. Learn the basic quantitative methods for health science including correlation, regression, analysis of variance, and nonparametric tests
2. Use computer for data analysis, including SAS on the VAX and spread sheet on a PC

Outline

Statistics: Exploring data, regression, Analysis of Variance, Chi-square tests, Mann-Whitney test, Life-tables, Reporting Results. Using the VAX: sign-on, e-mail, copying,

printing, editing. SAS: Data, FREQ, MEANS, PRINT, SORT, REG, LIFETEST, Sas/Graph.

PubH 5420: Statistical Computing I, Using Statistical Packages (SAS) (2 cr)

Description

Introduction to the use of the SAS to statistical package for the analysis of biomedical data. After an introduction to the operating system and editor of the VAX computer, SAS will be used for data manipulation, description, and basic statistical analysis (*t* tests, chi square, and simple regression).

Objectives

1. Use the operating system and editors on the VAX computer to manage files containing data, SAS commands, and SAS output
2. Use the SAS commands for data management and presentation:
   a. Read and write data files; combine data sets
   b. Sort and select cases; transform variables
   c. Describe data numerically and graphically, with informative labels and titles
3. Use SAS procedures for basic statistical inference:
   a. Compare means with paired and independent sample *t* tests
   b. Compare proportions with chi square tests
   c. Analyze linear relationships between two quantitative variables with regression and correlation procedures

Outline

1. Use of VAX mainframe, computer—login, file names, basic file handling (DIR, TYPE, PRINT, COPY, PURGE, DELETE), VAX Mail, running a SAS program, use of EDT editor
2. Introduction to SAS—Basic syntax, reading data, sorting and printing data, simple description with MEANS and FREQUENCIES
3. Descriptive statistics—PROC MEANS and UNIVARIATE for quantitative data, with options; PROC FREQ for categorical data and tabulation of quantitative data; description by subgroups; simple graphs; PROC PLOT to see relationship between quantitative variables. Reading data from external files
4. Basic regression and correlation calculations and plots, missing values, labels on variables and category values
5. Grouping values with IF-THEN statements or FORMATs
6. Selecting subsets of data. Using PROC MEANS to output data sets of summary statistics.
7. Comparing means and proportions—independent vs. matched. Structure for test: PROC TTEST, MEANS, UNIVARIATE, FREQ
8. Permanent data sets—creating, examining, and using them
9. Inference on means and proportions in SAS PROCs
10. Introduction to Analysis of variance, introduction to SPSS and BMDP

S.1

PubH 5450: Biostatistics I (4 cr)

Description

Descriptive statistics, Gaussian probability models, point and interval estimation for means and proportions, hypothesis testing, including t tests and chi-square tests, regression and correlation techniques, one way analysis of variance, applications in the health sciences using output from statistical packages.

Objectives

1. Describe data numerically and graphically
2. Understand basic probability concepts and use the Gaussian probability model
3. Understand elementary sampling theory
4. Estimate parameters and use large sample statistical inference techniques for means and proportions
5. Fit simple linear regression models
6. Use analysis of variance for independent samples

Outline

1. Graphical and numerical descriptions of data including stem-leaf plots, box plots, histograms, mean, median, standard deviation, interquartile range, normal distribution
2. Describing relationships of quantitative variables, scatter plots, linear regression line and correlation coefficient, checking residuals
3. Describing relationships of categorical variables, two-way tables, independence, relative risk and odds ratio as measures of association, problems with tables of aggregated data, adjusting rates.
4. Probability (joint, marginal, conditional in two-way tables, independence, relative risk and odds ration as measures of association, problems with tables of aggregated data, adjusting rates
5. Observational studies versus experiments, design principles, introduction to inference, normal confidence interval and test of hypothesis for mean when population variance is known
6. Inference for means using t-distribution: one sample, matched pairs, two independent samples with unequal or equal variances, introduction to sample size determination
7. Normal tests and confidence intervals for a proportion and for comparing two independent proportions, chi-square tests for two-way tables, comparing proportions in a matched pairs study
8. Regression and correlation inference: model, tests and intervals on slope and intercepts
9. Introduction to one-way ANOVA, sample size for power

PubH 5452: Biostatistics II (4 cr)

Description

Analysis of variance and multiple regression for biological and health science data, estimation, testing and prediction, underlying assumptions, model selection, applications.

Objectives

1. Understand multiple regression models, techniques, uses and abuses
2. Use SAS to analyze data by multiple regression
3. Assess the validity of standard regression assumptions and analyze complex data sets
4. Understand and apply analysis of variance methods using SAS

Outline

1. T-tests and confidence intervals using SAS
2. Simple linear regression, correlation and ANOVA
3. Multiple regression model
4. Regression diagnostics, residual analysis
5. Polynomials, dummy variables, methods of regression equation selection
6. One-way analysis of variance
7. Two-way analysis of variance, randomized blocks, balanced factorials
8. Regression approach to unbalanced designs or incomplete data for two-way ANOVA.

PubH 5454, Biostatistics III (4 cr)

Description

Analysis of categorical data with emphasis on log-linear models and inferences from observational data. Methods and applications of logistic regression and survival analysis including Cox's proportional hazards model.

Objectives

1. Analyze *r x c* contingency tables, including by chi-square
2. Analyze 2-, 3-, and higher-dimension contingency tables by long-linear models
3. Perform logistic regression, including for cohort and case-control studies
4. Perform survival analysis including Kaplan-Meier and Cox proportional hazards models
5. Use SAS to carry out the above analyses

Outline

1. Review *r x c* contingency tables and chi-square analysis, ordered 2xk tables, combination of several 2x2 tables, Mantel-Haenszel analysis, examples, history, plus other topics in two-way tables
2. Log-linear models, two-dimensional tables, odds ratio, sampling models, examples
3. Three dimensional tables, general log-linear model, estimated expected values, goodness of fit, hierarchical models, examples
4. Higher dimensional tables, selection of a model, step-wise procedures, examples
5. Logistic regression, usefulness as a regression model in cohort studies, categorical and continuous independent variables, examples. Application to case-control studies, interpretation of coefficients, examples
6. Introduction to survival analysis, basic concepts, censoring, estimation of survival curves and survival probabilities, hazard function, relative risk, Kaplan-Meier and actuarial methods, examples

7. Methods for comparing survival distributions, relationship to analysis of categorical data, cohort analysis, identification of prognostic factors related to survival time, examples
8. Cox's proportional hazards models, stratification and relation to conditional logistic model, case-control studies with multiple matching, examples

PubH 5610: Principles of Maternal and Child Health (3 cr)

Description

The purpose of this course is to examine policies, programs, legislation, and analytic approaches for identifying and serving the needs of mothers, infants, children, youth, and their families. Course content covers historical and political perspectives, organization of services, and themes that are integral to the development of MCH programs and services. The course format is comprised of faculty and guest presentations as well as small group and class discussions.

Objectives

1. Discuss the history of MCH programs and issues
2. Discuss the intent of major federal and state legislation related to the delivery of health services for mothers, children, and families
3. Demonstrate the ability to analyze major MCH policy and legislation in the United States
4. Identify the major health and social needs of the MCH population
5. Describe the programs in the broad field of maternal and child health at the federal, state, and local level
6. Describe analytic approaches to MCH problems
7. Discuss issues of access and advocacy relevant to MCH

PubH 5631: Program Evaluation in MCH (3 cr)

Description

This course introduces you to the structure and strategy of that type of inquiry know as evaluation. There is more to the practice of evaluation than applying or adapting standard research methods to real-world field settings. This course will introduce you to not only the methods or tool kit of the evaluator but also to some of the social, political, and ethical forces that shape evaluation design, implementation, and utilization.

Objectives

1. Develop and demonstrate a basic understanding of the evaluation concepts, issues, and terms
2. Demonstrate an understanding for the basic assumptions and rationale for evaluation
3. Develop and apply an understanding of the procedures and instrumentation necessary for evaluation
4. Conduct an elementary critique of an evaluation plan, report or article
5. Demonstrate an understanding of factors that enhance evaluation utilization
6. Develop an evaluation plan for oral presentation to class and written submission

PubH 5648: Grant writing (1 cr)

Objectives

1. Clearly write goal, objective, and methodology statements
2. Describe the core components of a grant and identify those factors within each section associated with quality grants
3. Describe the federal and private sector granting process
4. Be able to write a grant proposal, including:
   a. Problem statement
   b. Literature review
   c. Goal statement
   d. Objectives
   e. Methodology
   f. Evaluation

Outline

1. Principles of grant-writing
2. Seeking federal dollars
3. Setting goals and objectives
4. The grant review process
5. Critiquing a grant
6. Budgets
7. The IRB
8. Evaluation
9. Grant Review
10. Why grants fail

PubH 5651: Critical Reading of Scientific Literature (2 cr)

Description

Basic analytic tools for critical reading of peer-reviewed publications from a variety of professional perspectives.

Objectives

1. Promote critical reading of scientific literature in the adolescent health field
2. Broaden interdisciplinary perspectives on the language and logic of empirical research
3. Promote understanding of the peer review process for refereed journal articles
4. Enhance ability to discuss and critique scientific research

PubH 5700: Foundations of Public Health Administration Practice (3 cr.)

Description

This course provides students with an overview of issues surrounding the role, function, and administration of a public health agency. The Minnesota Department of Health actively participates in the planning, coordination, and teaching of the course. Three key department administrators with faculty appointments in the division serve

as core faculty and provide the liaison between the school and the department. Classes are centered around speakers from the Department of Health.

Objectives

1. Explore the evolution of public sector involvement in public health in the United States
2. Examine the activities, functions, and programs currently encompassed within the public health practice rubric at the state and local levels in regard to policy development, policy implementation, planning, and administration of public health programs using the Minnesota Department of Health as an organizational model
3. Develop decision-making skills through the analysis of public-health-related case studies
4. To give students the opportunity to learn from and meet with people who are actively functioning either as administrators or who have expertise in related content areas

Outline

1. Overview of community health services in Minnesota
2. Minnesota Department of Health overview and statutory authority/administrative rule making
3. Role of disease prevention and control in public health
4. Overview of family health services in Minnesota
5. Overview of facility and provider compliance
6. Environmental health in today's society
7. History of health care reform
8. Current health care market trends
9. Role and function of public health labs
10. Viewpoint of the commissioner's office

PubH 5702: Policy Issues in Public Health Administration (3 cr)

Description

The focus of the course will be on the development, implementation, and administrations of public health programs and the development of the policies for which these programs were designed and implemented. Smaller class sizes allow for the free exchange of ideas and asking of questions.

Objectives

The course will provide students the opportunity to meet and learn from people who are actively functioning in the roles of policy developers, policy implementers, administrators, and public health or public-health-related agencies and organizations.

Outline

1. Development and implementation of public health policy
2. Development of public policy in the reforming of the U. S. health care delivery system
3. The role of public relations in public health administration
4. Long-term-care policy in the United States
5. Ethical constructs in public health administration and practice

6. Public policy and the evaluation of the health services
7. The role of the media in relation to public health administration
8. Problem-solving in the development of public health administration
9. Urban public health policy: The role of the local health department
10. Public health policy regarding the integration, competition and concentration in the health care marketplace
11. Public health policy at the county level
12. Public policy in regard to access to health care for the undeserved populations: The neighborhood health center
13. Development and implementation of policy by health care delivery organizations
14. Role of foundations and corporations in funding public health organizations and programs
15. The interface between public health and integrated service networks
16. Public policy and administration of Minnesota Medical Assistance Program
17. The development of policy through the legislative process
18. Policy development in family planning: Administration of a community health agency under stress

PubH 5711: Public Health Law (4 cr)

Description

This course is oriented to public health professionals and administrators who have not had significant prior academic exposure to law-related problems. The scope of coverage will include: private law (particularly the functioning of the system of private law as it relates to public health goals); public law (public health, police power, general regulatory power, constitutional sources, etc.; additionally, selected federal health and health services measures will be discussed); and legal aspects of bioethical issues.

Objectives

1. Legal issues inherent in medical care and public health service delivery
2. The impact of legislative process upon health
3. The legal bases for the existence of governmental regulating, financing and delivering health services
4. The role of government in non-health service areas that affect health
5. The legal aspects of selected emergent issues in bioethics

Outline

1. Private Law: Concerned with the rights and duties of individuals in their relations to one another as private citizens.
   a. Concepts/issues:
      - The American legal system
      - Civil procedure
      - Torts
2. Public Law: Concerned with the mutual rights and obligations of the state and all persons within its jurisdiction.

a. Health law bases
   - State police power
   - Federal constitutional power
   - Individual constitutional rights

b. Methods of public control over health services
   - Regulation of health facilities
   - Regulation of health manpower
   - Regulation of health services financing and financing type delivery mechanisms
   - Regulation of instrumentalities involved in the delivery of health services

c. Methods of public control over activities affecting health
   - Regulation of personal behavior
   - Environmental health regulation

d. The agency with health responsibility
   - Executive agency structure
   - Executive agency procedure/administrative process

3. Legal aspects of bioethical issues: Topical legal analysis of current bioethical problems with public health implications.
   a. Abortion
   b. Organ transplantation
   c. Euthanasia

PubH 5739: Community Health Assessment and Assurance (3 cr.)

Description

This course is designed to increase each student's knowledge, understanding, and skills in two of the three core functions of public health agencies: Health assessment and assurance.

Objectives

1. Understand the history and importance of health assessment and assurance for the future of public health and the future of the public's health
2. Understand and have participated in group decision making relevant tho health assessment; e.g. nominal group technique, focus groups and the Minnesota Department of Public Health's Community Health Services approach to community health assessment
3. Have knowledge of sources of data and other information used in health assessment and be able to evaluate the quality of the data
4. Have knowledge of ways to collect information for use in community health assessment and assurance
5. Understand community health assessment and assurance from several different perspectives; e.g. public health agencies, hospitals, and health plans/integrated service networks

Outline

1. Introduction
2. Nominal group technique exercise

3. The history of health assessment and assurance
4. Desired information, data sources, assessment of data quality, data manipulation
5. Community health assessment from the perspective of health plans and institutions
6. Behavioral risk factor surveillance system
7. Community health assessment with community health services, Minnesota Department of Public Health
8. Assurance

PubH 5751: Principles of Management in Health Service Organizations (3 cr)

Description

This course seeks to apply theory and research from the disciplines of management to organizational problems found in public health agencies, hospitals, and managed care organizations. This is not a compendium on management, organizational psychology, or human relations, rather, a focus on one critical question: What can be done to improve the health, vitality, and well-being of health service organizations in which students are or will be employed?

Objectives

1. Delineate basic leadership theories and be prepared to state how they influence productivity and morale in public health organizations
2. Delineate concepts underlying contemporary management theory with particular emphasis on leadership behavior, conflict management, and innovation and change
3. Describe the key parameters in Total Quality Management (TQM) practice
4. Delineate the process of socialization for new employees in human service organizations
5. Delineate theory explaining the cause of communication disagreements and misunderstandings
6. Describe successful negotiations strategies
7. Describe how organizations change over their life cycles and be able to state the predictable crises that organizations move through
8. Define distress and be able to specify behavioral conditions that lead to distress within the work environment

Outline

1. Management: How to improve leadership skills
   a. What kind of leader are you?
   b. What are the characteristics of effective leaders?
   c. How do leaders bring about meaningful change?
   d. How do leaders create a climate where employees are highly motivated?
2. Total Quality Management: Building effective work teams
   a. What are the current trends in TQM?
   b. How do you build effect work teams through meaningful staff meetings?
   c. What potential impact does TQM have on health care organizations?
3. Managing diversity in the work place

a. What are the special opportunities and problems that people of color have in management roles? How can they best be resolved?

b. What are the special opportunities and problems that women confront in management roles? How can they best be resolved?

PubH 5740: Organizational Behavior (3 cr)

Description
Human behavior in organizations; motivation, leadership, influence of organizational structure, informal group behavior, interpersonal relations, supervision. Emphasis on preventing and solving problems among individuals and groups in organizations.

Objectives
1. Describe a structural process by which to prepare a speech
2. Deliver a speech that will be favorably reviewed by peers
3. Define personal leadership style including a discussion of its strengths and limitations
4. Define Maslow's theory of motivation and demonstrate how it can be replicated in the work environment
5. Define aggressive-hostile, passive-compliant, and goal-directed behavior and indicate how each influences professional credibility
6. Define the roles of a chairperson and specify strategies through which to build effective work teams
7. Describe a model of planned organizational change and discuss how Total Quality Management principles can improve productivity and morale in health care organizations
8. Define personal style of approaching and managing conflict situations and specify practical strategies for diminishing interpersonal conflict
9. Describe the early warning signals of job burnout and be prepared to discuss organizational and personal strategies which can be utilized in preventing occupational distress

Outline
1. How to deliver a speech they won't forget
2. How to strengthen personal leadership skills
3. How to create a motivate work force
4. How to establish credibility as a manager
5. How to create an effective work team
6. How to bring about meaningful organizational change
7. How to manage conflict
8. Managing diversity in the workplace
9. Managing occupational stress

PubH 5771: Health Care Financial Management: Public Sector Emphasis (4 cr)

Description
Basic principles of corporate finance and insurance concepts are integrated and applied to the health field, with a public sector emphasis in assignments and discussion.

Topics include: financial analysis; net present value and internal rate of return; health care capital and operating budgets; health care payment methods, including Medicare's payment systems for hospitals and physicians, and risk-adjusted capitation payment systems; population-based health care finance and managed care; financing aspects of public health policy and health care reform.

Objectives

1. Generic finance (general finance principles) and health care finance (special characteristics of health care markets, products, and financial management)
2. Theory (to understand underlying concepts, prepare for future developments in the filed, and enhance long-term career development) and current practice (to enhance short-term job placement)
3. Material on the health care system and markets (in which health organizations function) and health care management (concerning the internal operation of these organizations)
4. Perspectives of multiple stakeholders in the field, including: public health administrators; leaders of integrated service networks; disadvantaged populations; policy makers; managers of network components (e.g. insurance plan, medical group, hospital); clinical professionals; employers and other large health benefits purchasers; consumers; and health services researchers

Outline

1. Introduction
2. Key insurance concepts
3. Key microeconomic concepts
4. Key generic finance concepts
5. Health Products, prices, risk and return
6. Health plans and payment systems
7. Financial budgeting and management
8. Health care reform

PubH 5791: Public Health and Medical Care Organizations (3 cr)

Description

This course focuses on the structure and operation of public health and medical care systems in the United States, and some of the major socio-economic, policy, and ethical issues confronting those systems, including the rise and fall of the agenda for health care reform.

Objectives

1. Expand understanding of the organization and delivery of public health and medical care services in the United States, from both contemporary and historical perspectives
2. Develop greater breadth of perspective in understanding of critical political, social, economic and ethical issues emanating from problems in the "goodness of fit" between the health care needs of the population and the systems of care designed to address those needs
3. Further develop a personal ideology regarding health, medical care, and service provision, both in terms of the structure of such services and the forces affecting it, and personal role or place in that system

Outline

1. Models of medical care organization worldwide
    a. Convergence of modern medical care dilemmas
    b. Changing patterns and theories of disease causation and threats to health.
2. History and evolution of the medical profession and the U. S. medical care system
    a. Personal medical care services
    b. Ambulatory care
    c. Hospital-based services
3. Modern medical care; the problem of goodness of fit with the health and medical needs of the population
4. Populations at risk: Public health and medical care issues for populations on the edge
5. Characteristics of successful interventions: Why aren't they the norm?
6. Public health services in the United States: A national vision and shifting political realities
7. Prevention of ill health, health protection, health promotion; public-private collaborations in accountability for the health status of populations
8. HIV and AIDS: History, development, treatment
9. Prevalence, politics, and the future of the epidemic: Lessons for real reform in service provision

PubH 5852: Program Evaluation in Health and Mental Health Settings (3 cr.)

Description

This course focuses on planning useful program evaluation, with emphasis on meeting the needs of program administrators and planners. Coverage includes needs assessments, evaluation assessment, formative evaluation, implementation studies, and outcome evaluations; qualitative and quantitative data collection approaches; and ethical considerations.

Objectives

1. Diagnose evaluation needs of specific programs and indicate the type of evaluation study needed
2. State criteria for determining whether a given program is available
3. Indicate appropriate uses of qualitative and quantitative data in evaluation studies
4. Propose appropriate designs for outcome evaluation studies and recognize the strengths and weaknesses of various potential designs
5. Recognize common types of problems encountered in implementing evaluation studies and propose solutions

Appendix 2

Literature Review for the Development of Models of Graduate Public Health Nursing Education to Prepare Public Health Leaders

LaVohn Josten, Mila Aroskar, and Della Derscheid
University of Minnesota

Moira Shannon
Division of Nursing, USDHHS, HRSA, BHPr

Public health nurses play a crucial role in the health of America. Their skills are especially needed to work with other public health professionals in leading official public health agencies and in meeting the health needs of the public. Public health leadership is needed to speak out on conditions contributing to health, to promote just health care and to develop health policy (Krieger, 1990). That public health nurses can provide public health leadership has been affirmed (Salmon, 1993) and the importance of strengthening the skills of public health nurses has been noted (Conley, 1995; Gebbie, 1995; Heinrich, 1995). Further, the need to change the curriculum for all public health professionals is recognized (Trevino et al., 1995).

The call for these changes is based on changes in the financing and delivery of health care, changing roles of local and state health departments, and the health needs of the people (Berkowitz,1995; Conley, 1995; Gebbie, 1995; Lancaster, 1995; O'Brien, 1995). Public health agencies should emphasize the health of the entire population, core public health functions of assessment, policy development, and assuring and defining their contribution in a health care system increasingly dominated by managed care arrangements. These changes will occur within a context that recognizes the significant contribution of behavior to the occurrence of premature morbidity and mortality, the re-emergence of infectious diseases as a major public health problem and the recognition of the risk to human health from the environment. These trends and changes reflect needs of the populations served as well as the changing delivery approaches of the health care community such as the new emphasis on community-based care. The population trends include demographic changes such as the increasing numbers of the old-old population, increasing numbers of people representing racial, ethnic, and cultural diversity, and the high incidence of infectious and chronic diseases (American Association of Colleges of Nursing [AACN], 1993 & 1996; Mark, Turner, & Englevardt, 1990). Further trends affecting nursing and public health are the expansion of information technology and the focus of managed care systems on the health of populations as opposed to individual patients (AACN,

1993; National League for Nursing [NLN], 1992; Graff, Bensussen-Walls, Cody, & Williamson, 1995; Mettner, 1996).

Literature can guide the development of graduate nursing programs to prepare nurses to contribute to effective public health leadership. Due to the rapidly changing health care environment, emphasis in this review was given to literature published in 1990 or later. The broad literature review surveyed nursing in relationship to public health, public health sciences, public health leadership, community health, and interdisciplinary education in the health care professions. The review is organized according to the need for re-examination of the education of public health nursing leaders, health care leadership, public health and public health nursing competencies, and approaches to achieving those competencies.

The databases searched included MEDLINE (MEDLARS onLINE), DISSERTATION ABSTRACTS ONLINE, Cumulative Index of Nursing and Allied Health Literature (CINAHL), National Technical Information Services (NTIS) HEALTH PLANNING AND ADMINISTRATION. The search was further guided by the American Public Health Association (APHA) Section of Public Health Nursing definition of public health nursing as "the practice of promoting and protecting the health of population using knowledge from nursing, social, and public health sciences."

Need for Re-examination of the Education of Public Health Nursing Leaders

In response to changes in society and health care delivery systems and emerging public health problems, nursing is re-examining education for public health leadership. In addition to considerations of societal and health care delivery changes and the definition of the specialty, the design of educational programs should be guided by activities of nurses currently in the specialty, the role of organizations employing the specialists such as official public health agencies, the scope and practice of the specialty and the required competencies.

Activities of Nurses in Public Health Leadership Positions

The activities of nurses in leadership positions in official public health agencies have received very little attention in the literature. A survey of the 50 state health departments was conducted (Stevens, 1995). The following activities in descending order of frequency were reported by at least half the states as activities of the public health nurse in the highest ranking position: Policy development, consultant with local and state health department staff, quality assurance, representation in professional organizations, interpretation of nursing practice, setting directions for public health nursing, procedure development, communication, responding to work force issues, director of continuing education programs, direct supervision of staff, and budget development. In a study of responsibilities of managers, two local health departments reported that the management of human resources took the greatest amount of time of nurse managers (Dienemann & Shaffer, 1992). Other activities which took a significant amount of time included managing nursing services, marketing and planning, and information systems.

The activities of public health nursing leaders must fit within the context of the role and functions of public health agencies. Official public health agencies define their role within the mission of public health as stated in the Institute of Medicine (IOM) report *The Future of Public Health* (1988). The mission is to fulfill "society's interest in assuring conditions in which people can be healthy" (p.1). A similar intent is reflected in the mission statement developed by the Essential Public Health Services Work Group of the Core Public Health Functions Steering Committee (cited in Gebbie, 1995). It states the mission of public health is to promote physical and mental health as well as the prevention of disease, injury and disability.

The IOM (1988) recommendations about the mission of official public health agencies and their recommendations about core functions of assessment, policy development, and assurance have critical implications for public health leadership which has emphasized delivery of personal health services for the underserved.

The Essential Public Health Services Work Group (cited in Gebbie, 1995) described the duties of "Essential Public Health Services" as:

- Monitor health status to identify community health problems
- Diagnose and investigate health problems and health hazards in the community
- Inform, educate, and empower people about health issues
- Mobilize community partnerships to identify and solve health problems
- Develop policies and plans that support individual and community health efforts
- Enforce laws and regulations that protect health and ensure safety
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable
- Assure a competent public health and personal health care work force
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
- Research for new insights and innovative solutions to health problems (p. 25)

Public health nurses in leadership positions will need to understand this broad array of services so that they can provide leadership to the public health team in delivering these services. They must also work to assure that services incorporate cultural considerations.

In addition to consideration of the role of official public health agencies, public health nursing education programs should be guided by standards of practice for public health nursing. Widely recognized professional practice standards have been promulgated by the American Nurses' Association (ANA, 1986). Although the activities of the public health nurse may vary over time, the essence of public health nursing has remained unchanged and continues to focus on improving the health of the people. The ANA identifies nine specific areas as necessary for specialists who provide nursing leadership. They include theory, data collection, diagnosis, planning, intervention, evaluation, quality assurance, professional development, and interdisciplinary collaboration and research.

Health Care Leadership, Public Health, and Public Health Nursing Competencies

Health care leadership is crucial in rapidly changing health care delivery systems. The development of nursing education models to prepare public health leaders must also be guided by competencies identified by professionals and professional groups. Public health nurses who assume leadership positions in official public health agencies need the competencies recommended for all master's level public health professionals as their leadership will occur within the broader health care system, including managed care arrangements.

There are many similarities in the competencies identified for all health care professionals by the Pew Health Professions Commission (1991), for managed care professionals by Group Health Association of American (McQueen, 1995), for all master's-prepared public health professionals (Ibrahim, House and Levine, 1995), and for those identified for master's-prepared public health nursing leaders (Misener et

al., in press). The Misener study identified four competency domains needed for public health nursing leadership including: Political competency, business acumen, program leadership, and management capabilities.

All of the other professional groups call for some form of the Misener et al. (in press) domain of political competencies. Political competencies are defined as "using the political process to be advocates for clients, participating in community development, using information systems to complete community diagnoses, functioning as a member of a community agency, participating in policy and legislation development and engaging in effective debates" (Misener et al., in press, p.10). This area incorporates specific competencies of politics, policy, communication, political and social action. Related skills identified by two of the other professional groups contain similar concepts such as policy development and communication skills (Ibrahim, House, & Levine, 1995; Pew Health Professions Commission, 1991). Other authors have also called for competencies in understanding the governmental process related to financing and environmental policy development (Anderson, 1989; IOM, 1995; Tommet, York, Tomlinson, & Leonard, 1993).

A second competency domain is business acumen (Misener et al., in press). This includes the use of information systems for management of human and financial resources and utilization of quality assurance strategies, as well as marketing and fiscal management skills. These competencies are similar to the Pew competencies (1991) which emphasize development of high-quality, cost-effective, integrated health services and the establishment of cost and quality objectives for health care services. Managed care leaders have identified a related competency of implementing effective quality improvement processes (McQueen, 1995). Further, all public health professionals need skills in budgeting and financial management (Ibrahim, House, & Levine, 1995).

The third competency domain of program leadership is recommended for all health professionals, managed care professionals in management positions, public health officials and public health nursing leaders. Program leadership involves using skills in epidemiology to develop and evaluate programs and policies (Misener et al., in press). The Pew competencies (1991) call for skills in the practice of primary and secondary prevention with emphasis on the establishment of healthy environments and lifestyles. Managed care competencies include health promotion activities that are incorporated into the delivery of services (McQueen, 1995). Skills in developing health promotion programs is consistent with the need for program planning skills as identified for all public health professionals (Ibrahim, House, & Levine, 1995). The competency of developing and evaluating public health programs and policies is also recommended by the Quad Council for Public Health Nursing Organizations (1993). The Council recommends that public health nurses have competencies that include "community assessment of health risk factors and disease, policy development to reduce health problems, and assurance activities to provide the effective implementation of policies" (p. 2).

The final competency domain is management capabilities (Misener et al., in press). This competency incorporates skills such as facilitation of change through problem solving, conflict resolution, use of human resources, and interdisciplinary teams. The ability to function in teams was also identified for all health care workers (Pew Health Professions Commission, 1991) including managed care workers (McQueen, 1995). A competency recommended for all master's-prepared public health professionals was leading and participating in groups (Ibrahim, House, & Levine, 1995).

Nurses in leadership positions in official agencies manage public health nurses in functional areas that are client-, facility-, and community-related. Client-focused skills

are to maintain the nurse-client relationship and managing the client's health/illness status. Facility-related skills are managing health care delivery systems, monitoring health care quality, laboratory services, and teaching. Community-related activities involve marketing, protection of the environment, targeted outreach to populations at work, and policy and program development (AACN, 1996; Dienemann & Shaffer, 1992; Josten, Clarke, Ostwald, Stoskopf & Shannon, 1995). Public health nurses must maintain skills such as case finding, screening, assessment, case management, teaching, setting and prioritizing for decision-making (Kenyon et al., 1990).

While there are some differences in emphasis among the four professional groups competency recommendations, competencies for all public health professionals emphasize analytic and cultural skills and the ability to use the basic public health sciences in practice. Competencies for all health professions, including managed care professionals, emphasize the ability to influence and manage health services. Another source of support for these competencies for public health leadership is the survey of state and territorial health offices that asked about knowledge, skills and abilities needed to enhance leadership (Liang, Renard, Robinson, & Richards, 1993).

Approaches to Achieving Competencies

The competencies required by public health nurses in leadership positions demand a broad-based interdisciplinary or multidisciplinary approach to graduate education. The above cited literature supports the need for both discipline specific and multidisciplinary competencies. The latter competencies are required by all health professionals in order to develop relevant policy and provide effective health care services. To achieve multidisciplinary competencies, a multidisciplinary educational approach emphasizing collaboration and conflict resolution skills is recommended by major nursing organizations (AACN, 1996; ANA, 1986; NLN, 1992; Pew Health Professions Commission, 1991). More discipline specific course work is recommended in nursing and public health.

Recommended Course Work In Nursing and Public Health

Three major professional associations have made recommendations regarding course work to prepare master's-level public health professionals—the American Nurses' Association (ANA), the Association of Community Health Nursing Educators (ACHNE), and the Council on Education for Public Health (CEPH). The ANA and the ACHNE recommendations include the public health sciences and community and public health nursing, including the community needs assessment process, program administration, trends and issues, theory, research, methodology, and the health care delivery system (ANA, 1986; ACHNE, 1992). The public health sciences recommended by the two nursing organizations are similar to those recommended by CEPH (1992), which idenmtified five areas of course content for all public health students: Behavioral and social science, epidemiology, administration, environmental health, and biostatistics.

ACHNE developed guidelines to be used as a resource for graduate education that incorporated five broad categories: Theoretical perspectives, public health, community/public health nursing, methodology, and leadership. The theoretical perspectives category contains theoretical content in health promotion, teaching, leadership, and social and political change. The public health category encompasses research, policy, and interdisciplinary collaboration. The community/public health nursing category contains issues related to community assessment and management. The methodology category contains biostatistics and epidemiology and includes other topics such as grant-writing and computer skills. The leadership category contains subjects related to administration and the health care delivery system in addition to professional

accountability and a practicum experience. These content categories are reflected in the recommendations of the AACN (1993), ANA (1986), and CEPH (1992). Additionally, they were affirmed in the findings of a study of Community Health Nurse (CHN) leaders regarding core components of a master's-level curriculum (Selby et al., 1990). These leaders ranked as the five most important areas: Practicum experience, epidemiology, community health assessment and diagnosis, public health administration, and research methods.

Additional Course Related Recommendations

Public health nurse leaders need knowledge of business theories as they relate to nursing care delivery and health policies development. They also need to be adept at providing mentorship to other health care professionals and to assure quality services (CEPH, 1993; Dienemann & Shaffer, 1993; Josten et al., 1995). In addition, some authors recommend an administrative field study for graduate students under the supervision of a nurse executive. This experience should focus on administrative problem-solving (Boerstler & Suver, 1989; Jarski, 1991; Josten et al., 1995; Mark et al., 1990).

A deficit of most of the recommended courses exists in current programs for public health professionals including biostatistics, epidemiology, environmental and occupational health, public health nursing, preventive medicine, and technical skills (Roper, Baker, Dyal, & Nicola, 1992; Trevino et al., 1995). Trevino et al. (1995) claim that future public health leaders need education in schools of public health in order to have needed skills. Schools of nursing preparing public health nurse leaders then need, at least, clearly defined relationship with schools of public health to assure that these educational needs are met (Josten et al., 1995).

Interdisciplinary Education Including Dual Degree Programs

The need for interdisciplinary preparation of health care professionals has long been recognized in order to develop needed knowledge, attitudes, and skills for collaborative practice and meeting health care goals. Along with the public health sciences and related course work, it is also not institutionalized in most educational programs that prepare health care professionals and leaders.

Underlying the identified need for interdisciplinary education of master's prepared public health nurses is the reality that public health practice is interdisciplinary by nature and requires an interdisciplinary body of knowledge (Selby et al., 1991). Interdisciplinary education may take different forms. They include development of interdisciplinary teaching teams for individual courses and development of collaborative relationships with schools of public health or other departments such as business or public policy in order to provide learning experiences with faculty who are experts in their respective disciplines and fields of practice. Students are also provided with opportunities to communicate and share ideas with other disciplines with whom they will working in collaboratively in practice settings (Bassoff, 1983). Another way to accomplish interdisciplinary education is through development of dual degree or joint degree programs on the same campus or on different campuses (Boerstler & Suver, 1989; Weiss, McLain, & Fullerton, 1988). Advantages of intercampus programs include expanding the number and location of practicum sites of graduate education opportunities. They also provide opportunities for two faculty groups to share knowledge and expertise that enriches the programs in both institutions. There are limitations to these arrangements including increased time and expense for students.

The need for evidence of the impact of interdisciplinary professional education on practice and professional education policy in health care continues as efforts to institutionalize interdisciplinary education wax and wane over time (Bassoff, 1983). Challenges to development and institutionalization of interdisciplinary education include

three major barriers or disincentives: costs, faculty attitudes, and difficulties in scheduling (Larson, 1995). Larson suggests that the structures required for effective interdisciplinary education are not likely to occur without external incentives such as "federal policy related to financial support of health professions education, state policy related to practice and licensing regulations, professional policy with regard to accreditation guidelines and professional standards, and policies within institutions of higher education" (p. 184). The Kellogg Community Partnership Initiative provides one example of an interdisciplinary education/service project that facilitates students in the health professions working together in the community. Another effort related to interdisciplinary professional education discusses the state of the art in interdisciplinary education in continuous quality improvement in emerging systems of health care (Headrick et al., 1995).

Some of the findings relevant to the success—or lack of it—of interdisciplinary education initiatives include: little faculty experience in interdisciplinary education and the need for development of the faculty as a team. Luecht, Madsen, Taugher, and Petterson (1990) suggest "starting small" with a pilot project involving interested students and faculty where it will not be necessary to work out the broader institutional hurdles that exist in professional education programs. Finding new multifaceted ways to assess and evaluate interdisciplinary education that go beyond basic performance indicators to assess professionally oriented perceptions and related affective domains such as cooperation and autonomy for students is a further challenge for interdisciplinary education of health professionals (Luecht et al., 1990).

Summary and Conclusions

This literature review documents the need for graduate nursing educators to re-examine their approach to educating nurses for leadership positions in official public health agencies. This conclusion arises out of changing health trends, the changing role of official public health agencies and the recognition that nurses can provide the necessary leadership to address these changes. Guidance for curriculum development is available to faculty as to the desired competencies needed by public health nurses seeking leadership positions in official public health agencies. These competencies are both discipline specific and multidisciplinary. Guidance for curriculum development is also available from professional bodies who have made recommendations as to the types of course work that nurses preparing for public health careers should receive in their educational programs. In spite of the availability of this guidance some existing graduate level public health/community health programs do not include the recommended courses. Because the recommended courses and competencies are multidisciplinary, a multidisciplinary educational approach is recommended is spite of the barriers to such an endeavor. Graduate programs which can overcome the barriers and make available recommended courses aimed at achieving recommended competencies, will contribute to public health nurses assuming leadership positions in official public health agencies and other emerging health care systems.

References

American Association of Colleges of Nursing. (1993). *Position statement: Nursing education's agenda for the 21st century.* Washington, DC: Author.

American Association of Colleges of Nursing. (1996). *The essentials of master's education for advanced practice nursing.* Washington, DC: Author.

American Nurses' Association (1986). *Standards of community health nursing practice.* Washington, DC: Author.

American Nurses' Association. (1995). *Managed care: Challenges & opportunities for nursing.* (ANA publication code PR-27). Washington, DC: Author.

Anderson, E. (1989). Public health content in nursing curricula. *Nursing Outlook, 37*(5), 233-235.

Association of Community Health Nurse Educators. (1992). *Essentials of master's level community health nursing education for advanced practice.* Washington, DC: Author.

Bassoff, B. Z. (1983). Interdisciplinary education as a facet of health care policy: The impact of attitudinal research. *Journal of Allied Health, 12*(4), 280-286.

Berkowitz, B. (1995). Improving our health by improving our system: Transitions in public health. *Family & Community Health, 18*(3), 37-44.

Boerstler, H., & Suver, J. (1989). Management preparation for nurse executives: The dual degree option. *Nursing Administrative Quarterly, 13*(2), 19-23.

Conley, E. (1995). Public health nursing within core public health functions: "Back to the future." *Journal of Public Health Management and Practice, 1*(3), 1-8.

Council on Education for Public Health. (1993). *Criteria for Accreditation of Graduate Schools of Public Health.* Washington DC: Author.

Dienemann, J., & Shaffer, C. (1992). Manager responsibilities in community agencies and hospitals. *Journal of Nursing Administration, 22*(5), 40-45.

Dienemann, J., & Shaffer, C. (1993). Nurse manager characteristics and skills: Curriculum implications. *Nursingconnections, 6*(2), 15-23.

Gebbie, K. (1995). Follow the money: Funding streams and public health nursing. *Journal of Public Health Management and Practice, 1*(3), 23-28.

Graff, B. L., Bensussen-Walls, W., Cody, E., & Williamson, J. (1995). Population management in an HMO: New roles for nursing. *Public Health Nursing, 12*(4), 213-221.

Headrick, L. A., Norman, L., Gelmon, S., & Knapp, M. (1995). *Interdisciplinary professional education in the continuous improvement of health care.* [Available from Health Services Resource Administration, Bureau of Health Professions, order No. 103 HR940534P000-000, Project Officer Bernice Porlak].

Heinrich, J. (1995). New horizons for public health nursing. *Journal of Public Health Management and Practice, 1*(3), pp. vii-viii

Ibrahim, M., House, R., & Levine, R. (1995). Educating the public health work force for the 21st century. *Family & Community Health, 18*(3), 17-25.

Institute of Medicine. (1988). *The future of public health.* Washington, DC: National Academy Press.

Jarski, L. M. (1991). Administrative fellowship: A bridge to success. *Journal of Nursing Administration, 21*(3), 28-31.

Josten, L., Clarke, P. N., Ostwald, S., Stoskopf, C., & Shannon, M. D. (1995). Public health nursing education: Back to the future for public health sciences. *Family & Community Health, 18*(1), 36-48.

Kenyon, V., Smith, E., Hefty, L.V., Bell, M. L., McNeil, J., & Martaus, T. (1990). Cinical competencies for community health nursing. *Public Health Nursing, 7*(1), 33-39.

Krieger, N. (1990). *On becoming a public health professional: Reflections on democracy, leadership, and accountability.* Comencement address, School of Public Health, University of California at Berkeley.

Lancaster, W. (1995). Is there a future for public health? *Family & Community Health, 18*(3), 1-8.

Larson, E. L. (1995). New rules for the game: Interdisciplinary education for health professionals. *Nursing Outlook, 43*(4), 180-185.

Liang, A. P., Renard, P. G., Robinson, C., & Richards, T.B. (1993). Survey of leadership skills needed for state and territorial health officers, United States, 1988. *Public Health Reports, 108*(1), 116-120.

Luecht, R. M., Madsen, M. K., Taugher, M. P., & Petterson, P. J. (1990). Assessing professional perceptions: Design and validation of an interdisciplinary education perception scale. *Journal of Allied Health, 19*(2), 181-191.

Mark, B. A., Turner, J. T., & Englebardt, S. (1990). Knowledge and skills for nurse administrators. *Nursing & Health Care, 11*(4), 184-189.

McQueen, S. (1995, Spring). The growing need for private sector public health competencies. *The Link, 8*: 1, 8. Baltimore, MD: Council on Linkages Between Academia and Public Health Practice.

Mettner, J. (1996). From managed care to managed health: Implementing prevention programs in managed care. *The Bulletin, 40*: SA4-SA7.

Misener, T. , Alexander, J., Blaha, A., Clarke, P., Cover, C., Felton, G., Fuller, S., Herman, J., & Rodes, M. (In press). National Delphi to determine leadership competences for public health. *Image.*

National League for Nursing. (1992). *An agenda for nursing education reform. In support of nursing's agenda for health care reform.* Washington, DC: Author.

O'Brien, M. (1995). Building a new health system: Implications for public health management and practice. *Journal of Public Health Management and Practice, 1*(3), 29-34.

Pew Health Professions Commission. (1991). *Healthy America: Practitioners for 2005.* Durham, NC: Duke University Medical Center.

Quad Council of Public Health Nursing Organizations. (1993). *Public health nursing in a reformed health care system.*

Roper, W. L., Baker, E. L., Dyal, W. W., & Nicola, R. M. (1992). Strengthening the public health system. *Public Health Reports, 107*(6): 609-615.

Salmon, M. E. (1993). Editorial: Public health nursing—the opportunity of a century. *American Journal of Public Health, 83*(12), 1674-1675.

Selby, M. L., Riportella-Muller, R., Quade, D., Legault, C., & Salmon, M. E. (1990). Core curriculum for master's-level community health nursing education: A comparison of the views of leaders in service and education. *Public Health Nursing, 7*(3), 150-160.

Selby, M. L., Riportella-Muller, R., Salmon, M. E., Legault, C., & Quade, D. (1991). Master's degree-level community health nursing educational needs: A national survey of leaders in service and education. *Journal of Professional Nursing, 7*(2), 88-98.

Stevens, R. (1995). A study of public health nursing directors in state health departments. *Public Health Nursing, 12*(6), 432-435.

Tommet, P. A., York, J. L., Tomlinson, P. S., & Leonard, B. J. (1993). Graduate nursing education: Developmental disabilities and special health care needs. *Issues in Comprehensive Pediatric Nursing, 16*, 239-258.

Trevino, F. M., Hicks, S. C., McCarter, K. S., Levine, B., Jacobs, J., Parkin, R., & Gilbert, R. C. (1995). The new public health challenges: Gaining visibility and recognition. *Family & Community Health, 18*(3), 9-16.

Weiss, S., McLain, B., & Fullerton, J. (1988). A collaborative intercampus model for graduate studies in primary care nursing. *International Journal of Nursing Studies, 25*(4), 261-270.

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